

*Comments not forwarded as memo;
Comments incorporated in Schaeffer → Pennington
memo drafted by D. Leedy.*

MEMORANDUM FOR: F/CM2 - Joe P. Clem

FROM: F/CM1 - John D. Wingard

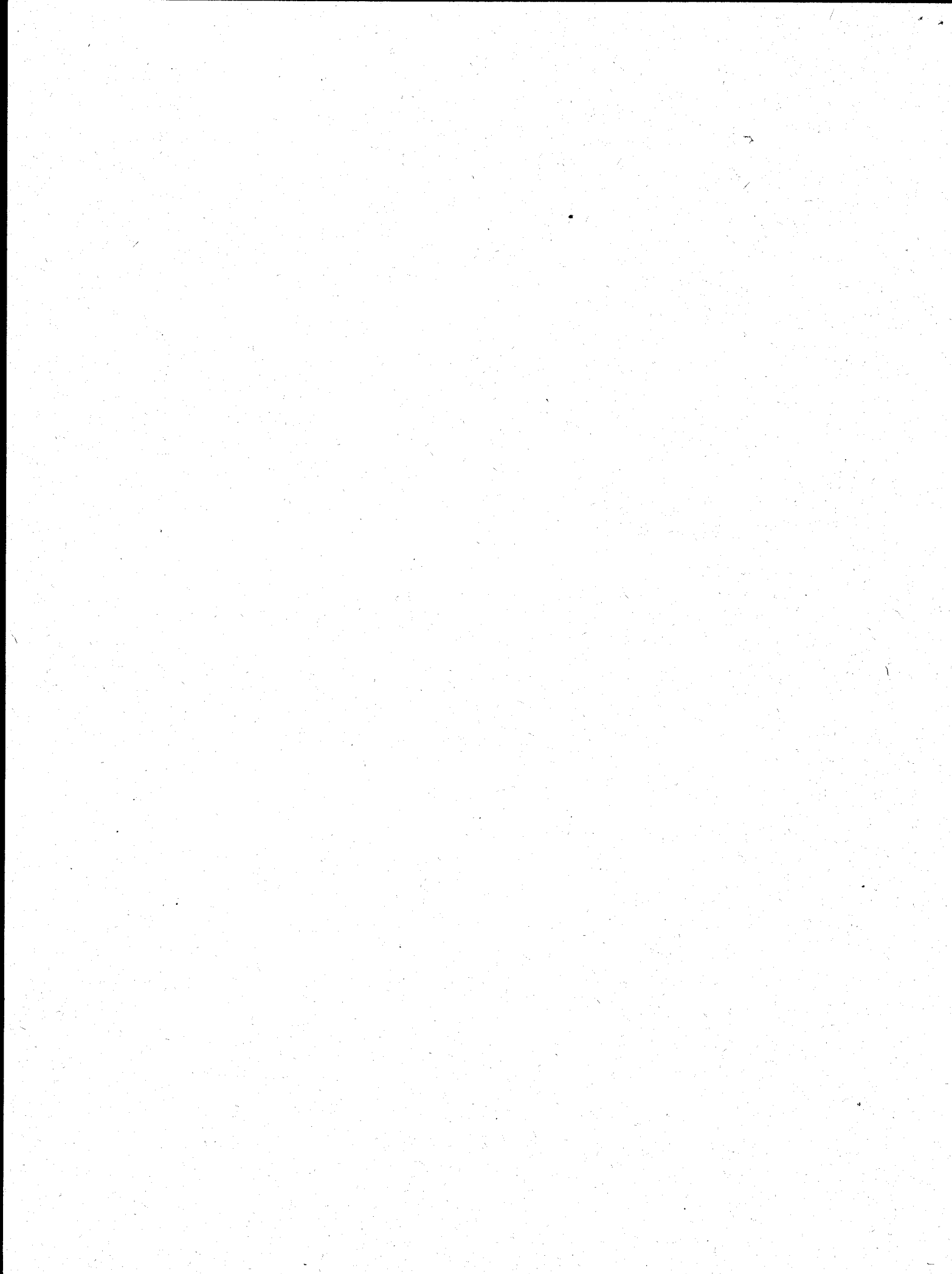
SUBJECT: Comments of Draft for Secretarial Review of the
"Block" Proposal, Amendments 31 & 35 to the IFQ
Management Alternative for Fixed Gear Sablefish
and Halibut Fisheries of the GOA/BSAI

The Modified Block Proposal (MBP), in summary, proposes to put initial Quota Share (QS) allocations under 20,000 lbs. into indivisible blocks. The purpose is to maintain a certain portion of the QS in a form the Council believes will be more accessible to small and part-time fishermen. By doing so the Council hopes to lower the level of QS consolidation and maintain a higher level of diversity in the halibut/sablefish industry than would occur under the IFQ program (status quo) scheduled to go into effect in 1995. The MBP will likely decrease the economic efficiency that would be achieved under the IFQ program and increase administrative costs.

Although I think the concerns of the proponents of the MBP are legitimate, the Draft contains no social or economic impact assessment to demonstrate the significance of the concerns. There is some speculation concerning the level of potential consolidation under the status quo and MBP. However, there is no analysis indicating key variable such as community dependence, other employment opportunities, etc. that would demonstrate the social and economic impacts expected under various levels of consolidation.

The IFQ plan already contains provisions to mitigate against consolidation including a cap on QS held by an individual, restrictions on the transfer of QS between vessel classes, and QS allocation by area. Consequently, the IFQ plan already creates a segmented market for QS that should facilitate access by small and part-time fishermen. The MBP would add another layer of market segmentation that the Council believes will further enhance accessibility by small and part-time fishermen. However, as pointed out in the economic analysis (RIR Section 3.6 & 3.7), there is no certainty that this will be the outcome. There exists the possibility that increased search and transactions costs may fall disproportionately upon those fishermen that the MBP is designed to assist.

In summary, I think the concerns expressed by the MBP proponents are legitimate. Unfortunately, necessary social and



economic impact analysis has not been provided in the Draft to assess the significance of these concerns. This leaves the presentation at the level of a hypothetical exercise with no grounding in actual data analysis. An assessment of community dependence on the subject fisheries, an evaluation of employment impacts and alternative employment opportunities, and analysis of other relevant variables associated with social and economic impacts is necessary to reliably determine if the impacts expected under an unmodified IFQ plan warrant the foregone economic efficiency and increased administrative costs of the Modified Block Proposal.

H:\WPDOC\FMP\BLOCKPRO.REV

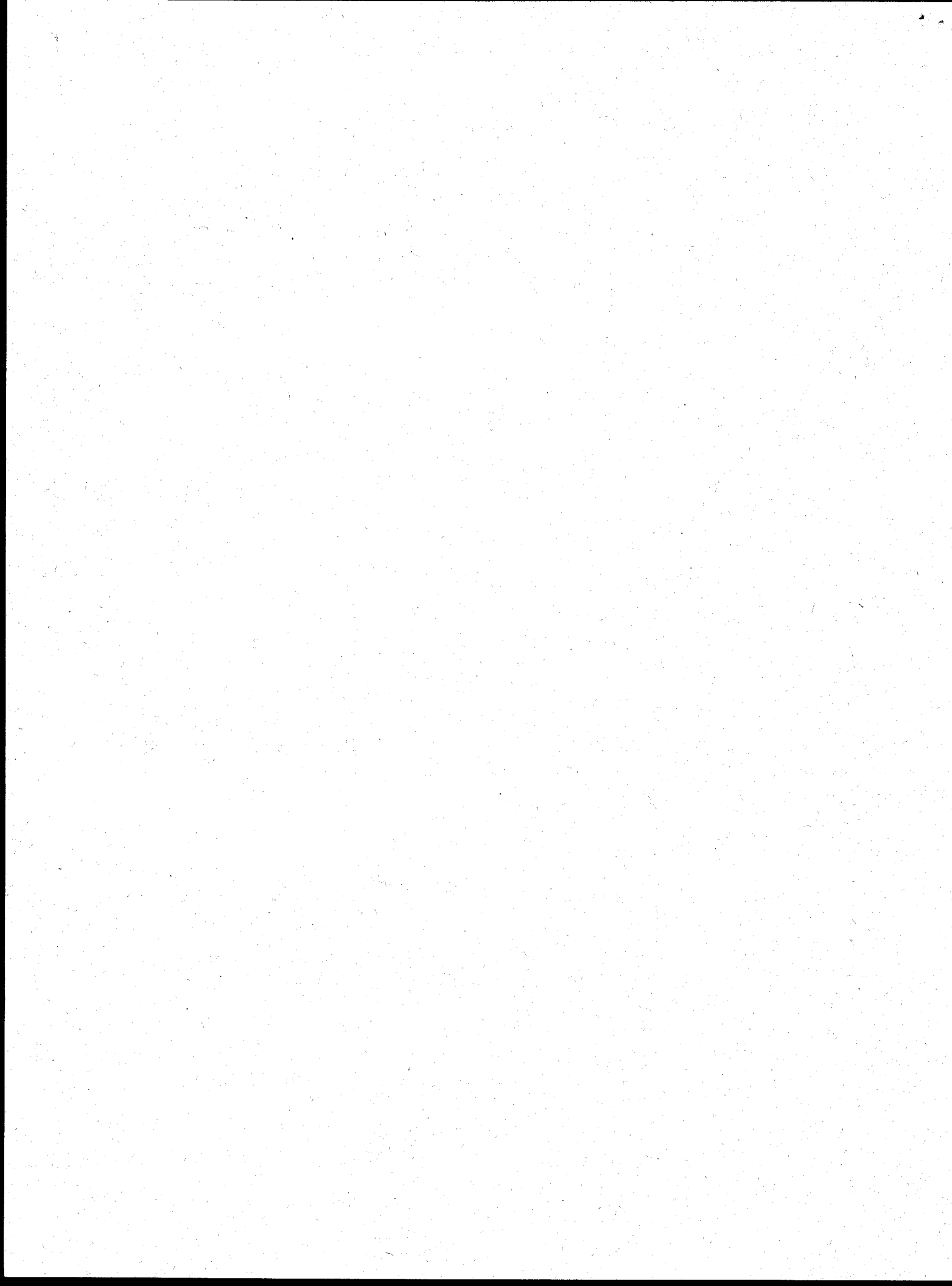
F/CM1:JDWingard:08/26/94

cc: F/CM: RSchaefer, DCrestin

F/CM1: ABilik, PFricke, RSurdi

F/CM2: DJLeedy, CBelli, WChappell, PHooker,

GCF: WNeilander



DRAFT FOR SECRETARIAL REVIEW

ENVIRONMENTAL ASSESSMENT

REGULATORY IMPACT REVIEW/INITIAL REGULATORY FLEXIBILITY ANALYSIS

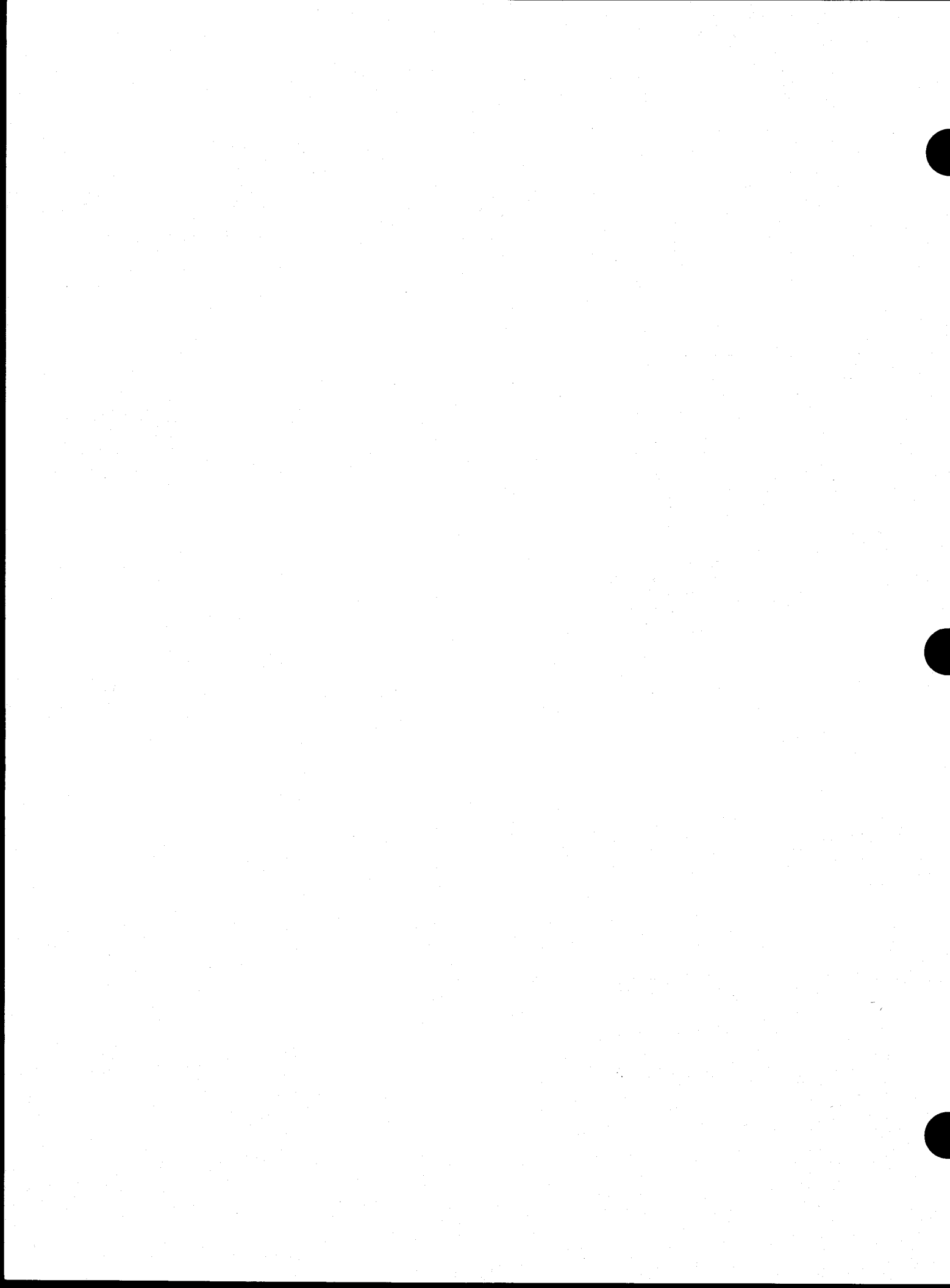
**FOR
THE "SITKA BLOCK" PROPOSED AMENDMENT
AND
THE "FULL/PARTIAL BLOCK" PROPOSED AMENDMENT
AND
THE "MODIFIED BLOCK" PROPOSED AMENDMENT
TO THE INDIVIDUAL FISHING QUOTA MANAGEMENT ALTERNATIVE
FOR FIXED GEAR SABLEFISH AND HALIBUT FISHERIES**

GULF OF ALASKA

AND

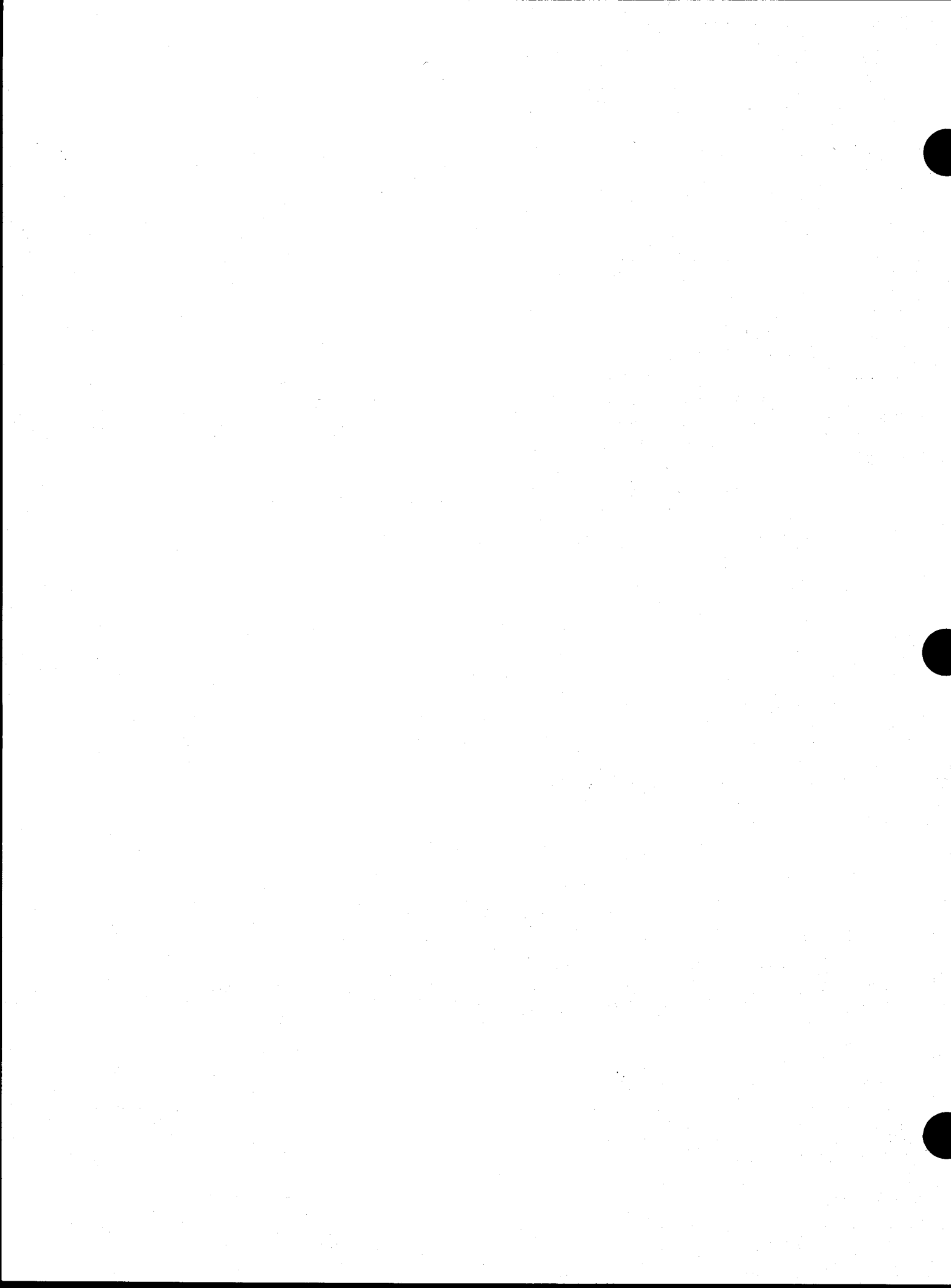
BERING SEA/ALEUTIAN ISLANDS

May 25, 1994



LIST OF COMMON ACRONYMS

ABC	Acceptable biological catch
ADF&G	Alaska Department of Fish and Game
AP	Advisory Panel
Council	North Pacific Fishery Management Council
CZMA	Coastal Zone Management Act
DAP	domestic annual processing
EEZ	exclusive economic zone
EIS	Environmental Impact Statement
ESA	Endangered Species Act
FMP	Fishery Management Plan
IFQ	Individual Fishing Quota
IPHC	International Pacific Halibut Commission
MFCMA	Magnuson Fishery Conservation and Management Act
MMPA	Marine Mammal Protection Act
MSY	maximum sustained yield
mt	metric tons
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
OY	optimum yield
PSC	prohibited species catch
QS	quota share or quota shares
RIR/IRFA	Regulatory Impact Review/Initial Regulatory Flexibility Analysis
SSC	Scientific and Statistical Committee
TAC	total allowable catch
TALFF	total allowable level of foreign fishing

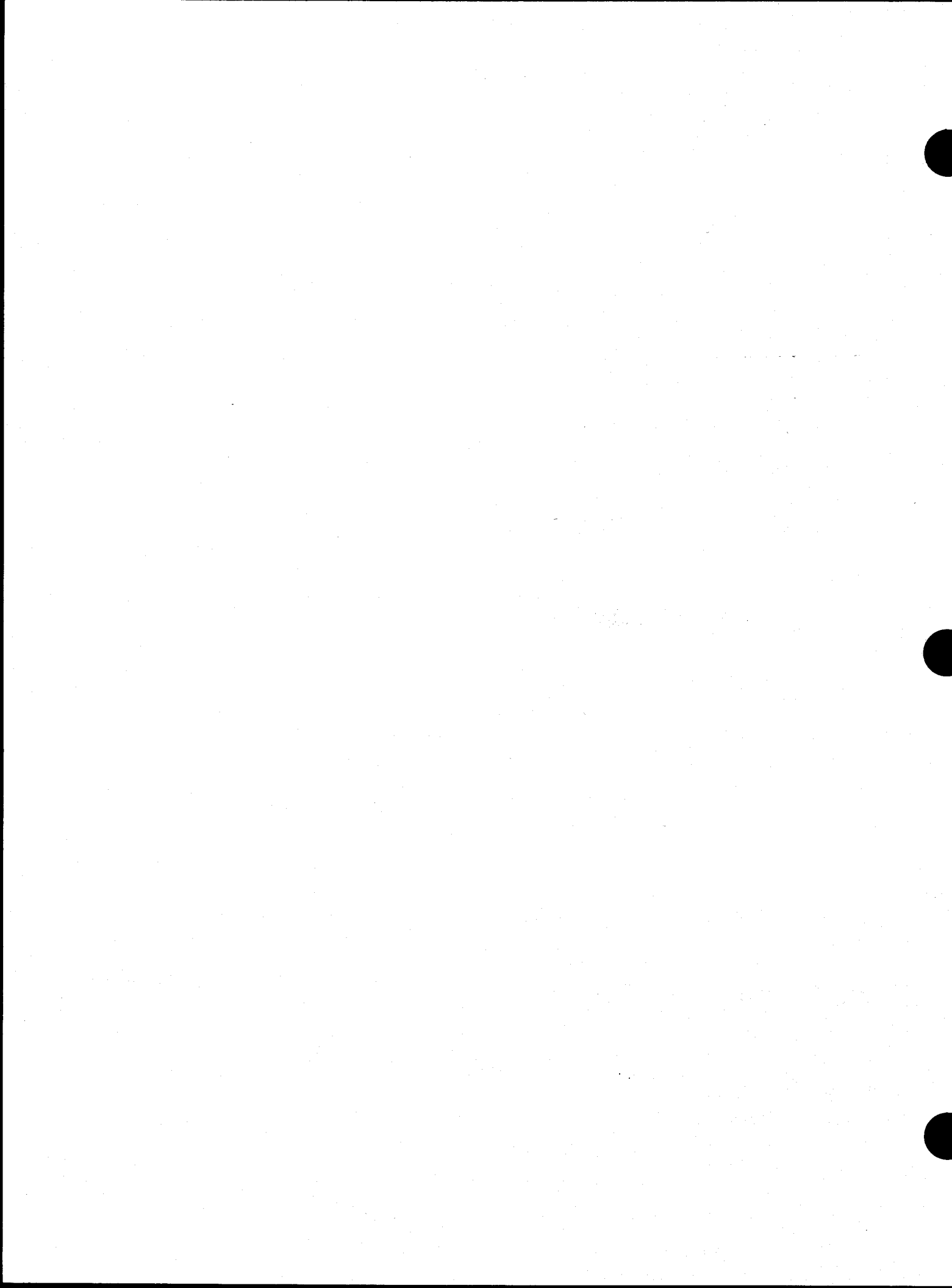


**DRAFT
ENVIRONMENTAL ASSESSMENT
REGULATORY IMPACT REVIEW/INITIAL REGULATORY FLEXIBILITY ANALYSIS
FOR
THE "SITKA BLOCK" PROPOSED AMENDMENT AND
THE "FULL/PARTIAL BLOCK" PROPOSED AMENDMENT AND
THE "MODIFIED BLOCK" PROPOSED AMENDMENT
TO THE INDIVIDUAL FISHING QUOTA MANAGEMENT ALTERNATIVE
FOR FIXED GEAR SABLEFISH AND HALIBUT FISHERIES**

**GULF OF ALASKA
AND
BERING SEA/ALEUTIAN ISLANDS**

CONTENTS

EXECUTIVE SUMMARY	1
PART I:	
Analysis of the Sitka Block Proposed Amendment to the Individual Fishing Quota Management Alternative for Fixed Gear Sablefish and Halibut Fisheries	21
PART II:	
Analysis of the Full/Partial Block Proposed Amendment to the IFQ Management Alternative for Fixed Gear Sablefish and Halibut Fisheries	117
PART III:	
Analysis of the Modified Block Amendment to the IFQ Management Alternative for Fixed Gear Sablefish and Halibut Fisheries	205



EXECUTIVE SUMMARY

1.0 ORIGIN OF THE PROPOSALS

This draft Environmental Assessment/Regulatory Impact Review/Initial Regulatory Flexibility Analysis (EA/RIR/IRFA) contains analyses of three types of proposed "block" amendments to the recommended Individual Fishing Quota (IFQ) Program for management of the fixed gear sablefish and halibut fisheries off Alaska. Part I of this document contains an analysis of "The Sitka Block Proposal," Part II contains an analysis of "The Full/Partial Block Proposal," and Part III contains an analysis of the "Modified Block Proposal."

All of the block proposals provide possible methods to address concerns that there may be a large consolidation of quota shares (QS) under the current IFQ plan and that such an extensive consolidation might have harmful social and economic effects on some of Alaska's coastal fishing communities. All of the proposals provide a means to make a portion of the QS relatively unattractive to large full-time operators. In doing so, the block proposals attempt to ensure that new entrants, small part-time operations, and diverse operations that want to fish on a part-time basis can continue to profitably participate in these fisheries.

In December of 1991 the Council recommended an IFQ program for management of the fixed gear sablefish and halibut fisheries off Alaska. For purposes of this action, the Council defined "fixed gear" to include all hook and line fishing gears (longlines, jigs, handlines, troll gear, and etc.) in the Gulf of Alaska (GOA) and Bering Sea and Aleutian Islands Areas (BSAI) and pot gear for sablefish in the BSAI.

In April of 1992, after conducting a further analysis of the alternatives,¹ the Council rejected a motion to rescind its earlier vote and directed that the IFQ plan amendment package be forwarded to the Secretary of Commerce.

At that same April 1992 meeting, the Council asked staff to analyze two proposed amendments to their IFQ plan. These were the "Sitka Block Proposal" for both the sablefish and halibut fisheries and the "1,000 Pound Minimum IFQ Proposal" for the halibut fishery. At the Council's June 1992 meeting, the Council asked staff to analyze a third proposal. This proposal has been named the "Full/Partial Block Proposal."

Discussion Draft reports were prepared for the three proposals and were presented to the Council and Advisory Panel at their September 1992 meeting. These reports were sent out for public review in October of 1992 and again presented to the Council at their January 1993 meeting.

At the January 1993 meeting, the Council adjusted the alternatives under each proposal and asked that an EA/RIR/IRFA be prepared. They next asked for a single report on the two block proposals and a separate report on the "1,000 Pound Minimum IFQ" proposal.

¹See Supplemental Analysis of The Individual Fishing Quota Management Alternative For Fixed Gear Sablefish and Halibut Fisheries - Gulf of Alaska and Bering Sea/Aleutian Islands (March 27, 1992). For brevity, this document will be referred to as The Supplemental Analysis herein.

At their June 1993 meeting, the Council examined a draft EA/RIR/IRFA for Council Review which covered both the Sitka Block and Full/Partial Block proposed amendments and a draft EA/RIR/IRFA for Council Review on the "1,000 Pound Minimum IFQ." The Council recommended that the report be sent out for public review with minor editorial changes. At that meeting, the Council dropped the "1,000 Pound Minimum IFQ" proposal from further consideration, but asked that the draft EA/RIR/IRFA for the two block proposals be sent out for public review.

At their September 1993 meeting, the Council took public testimony on the draft EA/RIR/IRFA for Public Review on the two types of block proposals. At that meeting, the Council developed and adopted a "Modified Block" proposed amendment which combined elements of the Full/Partial Block alternatives with elements of the current IFQ program. The Council felt that the Modified Block proposed amendment would achieve the objectives of the earlier block proposals with fewer restrictions on the flexibility and economic efficiency of the IFQ program as a whole.

This report contains the revised draft EA/RIR/IRFA for the block proposals which includes an analysis of the Modified Block proposed amendments adopted by the Council in September 1993. Part I of this document covers the Sitka Block alternatives, Part II covers the Full/Partial Block alternatives, and Part III covers the Modified Block proposed amendments.

2.0 OVERVIEW OF THE SITKA BLOCK PROPOSAL

The Sitka Block proposal was submitted by the Alaska Longline Fisherman's Association (ALFA). The Sitka Block proposal was developed to address widespread concerns that the current IFQ plan for halibut and sablefish might result in a large consolidation of quota shares (QS) that would greatly reduce the current diversity of fishing operations in Alaska's rural coastal communities.²

Sitka Block proponents think that if the current diversity of fishing operations is not maintained, the IFQ program may prove to be disruptive to the social structure and economies of Alaska's rural coastal fishing communities. The Sitka Block amendment seeks to achieve some of the benefits of the IFQ program, while further constraining the program in an effort to ensure that a relatively large and diverse group of fishing operations will continue to exist.

While part-time operations are allowed to purchase small amounts of QS under the current plan, Sitka Block proponents fear that the QS may be more valuable to more full-time operations. Thus they are concerned that smaller producers, part-time participants, and entry level participants may tend to disappear from these fisheries under the current IFQ plan.

The Sitka Block proposed amendment would allocate QS in the same amounts as the present plan. However, it would alter the present plan by placing a person's initial allocation of QS into a "block(s)" and requiring permanent transfers of QS to be "tied" to the block. It would also add a new ownership capacity constraint by restricting the number of blocks that a person could hold.

The proposed Sitka Block constraints are intended to guarantee that there will be a wide range of block sizes permanently available in an area, each of which will be appropriate to different types of fishing operations. A large number of small blocks is also meant to guarantee the continued existence of an entry level fishery.

The basic elements of the proposal can be summarized as follows:

1. Initial QS allocations for each area would be made in blocks. QS in a block would remain "tied" to the block and could only be permanently sold or transferred as a block. There are the following two "sweeping up" exceptions to this proposed rule:
 - a. Halibut blocks in an area which have QS worth less than 1,000 pounds of IFQ in the implementation year may be combined as long as the resulting block does not exceed 1,000 pounds of IFQ.
 - b. Sablefish blocks in an area which have QS worth less than 3,000 pounds of IFQ in the implementation year may be combined as long as the resulting block does not exceed 3,000 pounds of IFQ.³

²Throughout this report, QS will refer to quota share and/or quota shares.

³Blocks will contain QS and not IFQs. This "sweeping-up" provision may have to be defined in terms of QS or in terms of IFQ value of those QS in the implementation year. The IFQs associated with a block will vary each year depending upon the TAC in the area and the total number of QS outstanding. The rule for the sweep-up will need to be written with care.

- how is this determined*
2. ? The "maximum block size" allowed in an area would be set at one-half the most restrictive QS constraint impacting the area. A person who receives an initial allocation of QS in an area in excess of the maximum block size will be issued QS in multiple blocks. For example, a person with QS in an area equal to 1.5 times the maximum block size will be issued one block equal to the maximum block size and one block equal to .5 times the maximum block size.
 3. All permanent sales or transfers of blocks will be free and clear of all control, fiduciary trust, and/or future contract.
 4. Discussions with the originators of the Sitka Block proposal indicated that they would want the quota shares (IFQ) leasing provisions to remain identical with the current plan. Thus, while quota shares can only be permanently transferred as a block, the block can be divided, to a limited extent, for purposes of seasonal transfers of IFQs.

A number of alternative versions of the Sitka Block proposal were included in this analysis. The alternatives vary with respect to the number of catcher vessel classes, the number of blocks a person can hold in an area, and the number of blocks that can be fished from a vessel.

These alternatives are explained and analyzed in Part I of this report. A brief overview of some of the results of the Sitka Block analysis is included in Section 5.0 of this Executive Summary.

3.0 OVERVIEW OF THE FULL/PARTIAL BLOCK PROPOSAL

The "Full/Partial Block Proposal," like the Sitka Block proposal, attempts to address some of the concerns which have been raised about the current IFQ plan by small vessel operators, crewmen, and coastal fishing communities. Again, the concern seems to be that QS may be bought up by full-time operators and the fisheries will no longer be profitable for small-time operators, diversified operations, or new entrants.

The Full/Partial Block proposal was submitted by Council member Ron Hegge. Mr. Hegge felt that the Sitka Block proposal would address those concerns but that it also would create new opposition to the program among medium and large operators. Mr. Hegge offered the Full/Partial Block proposal as a possible compromise between the current IFQ plan and the Sitka Block proposal.

The basics of the Full/Partial Block proposal, as revised at the January 1993 Council meeting, are as follows:

1. Persons would receive the same amount of QS that they would get under the current plan. However, some new constraints would be added which would tie QS together for purposes of permanent transferability.
2. Persons would be issued QS in "blocks." In each area, the number of QS which represents 20,000 pounds of IFQ in the implementation year would be established as a "full block" for the area.⁴ QS representing amounts less than 20,000 pounds would be put into "partial blocks."
3. A person who has QS worth less than 20,000 pounds of IFQ in the implementation year would be issued one partial block containing those QS. A person who has QS worth more than 20,000 pounds of IFQ in the implementation year would be issued one or more full blocks and one partial block containing those QS.
4. The number of full blocks initially issued to a person in an area would be determined by dividing the person's QS by the number of QS which represents 20,000 pounds in the implementation year. The whole number resulting from that division would be the number of full blocks. The remainder resulting from that division would be placed into a single partial block.
5. The QS initially allocated would remain permanently tied to these blocks. The amount of QS contained in a partial block would be variable. The amount of QS contained within a full block would be permanently fixed by area.
6. A person could hold any amount of full blocks as long as that amount did not exceed any of the ownership constraints in the current plan. A person who holds a full block(s) in an area can hold only one partial block in that area.

⁴Note that in subsequent years, the amount of QS in a full block could be worth more or less than 20,000 pounds of IFQ as TACs change.

7. Under the original Full/Partial Block proposal, a person who holds no full blocks in an area could hold up to three partial blocks in that area. The analysis herein also contains alternatives where such persons can hold only two blocks per area.
8. The current IFQ plan defines catcher vessel size categories and prohibits transfer of QS across those categories. Under the original Full/Partial Block proposal these transfer restrictions would be removed. The distinction between catcher vessels and freezer-longliners would be maintained. The analysis in this report contains alternatives with and without catcher vessel size categories.

Mr. Hegge felt that the Full/Partial Block proposal would address the concerns of small part-time operators and potential new entrants without unduly restricting the potential opportunities for profitable consolidations among medium and large operators.

The permanent existence of a large number of relatively small partial blocks of variable size in each area, coupled with the constraint on the number of partial blocks that a person could hold is intended to ensure the continued existence of a fleet of part-time operators. It is also intended to ensure that entry level amounts of QS will be available for new entrants.⁵ The existence of a number of equal-sized full blocks in an area is intended to allow the creation of larger, more full-time operations.

At its January 1993 meeting the Council directed staff to prepare a Draft EA/RIR/IRFA for the June 1993 Council meeting in Kodiak. At that time the Council requested the incorporation of a "sweeping up" provision in the plan similar to one contained in the Sitka Block plan. The Council also directed the staff to narrow its focus to a plan with a 20,000 pound full block size.⁶

In the halibut fishery, the sweeping up provision would allow for any number of small blocks to be aggregated into one partial block so long as the total QS in that final partial block would not exceed 1,000 pounds of IFQ in the implementation year. A similar provision in the sablefish fishery would allow small blocks to be combined into a single partial block as long as the resulting block does not contain QS worth more than 3,000 pounds of IFQ in the implementation year.

These Full/Partial Block alternatives are explained and analyzed in Part II of this report. A brief overview of some of the results of the Full/Partial Block analysis is included in Section 5.0 of this Executive Summary.

⁵Under the current IFQ plan, diversified operations, new entrants, or small part-time operators could purchase amounts of QS on the market. The Sitka Block proposal, the Full/Partial Block proposal, and the Modified Block proposed amendment implicitly assume that full-time operations will be the most profitable under the current IFQ plan and such operations will be willing to pay the most for QS. Consequently, the proposals also assume that part-time operations will tend to disappear if the current IFQ plan is not altered.

⁶The original Full/Partial Block proposal called for full blocks with QS worth 10,000 pounds of IFQ in the implementation year. See Discussion Draft Analyses of the Sitka Block Proposed Amendment and the Full/Partial Block Proposed Amendment to the Individual Fishing Quota Management Alternative for Fixed Gear Sablefish and Halibut Fisheries, October 20, 1992. This document will be referred to as the Discussion Draft herein. The report covered 10,000 pound and 30,000 pound full block cases.

4.0 OVERVIEW OF THE MODIFIED BLOCK PROPOSAL

At their September 1993 meeting, the Council took public testimony and discussed the Sitka Block and Full/Partial Block alternatives. The Alaska Longline Fisherman's Association (ALFA) who had originally proposed the Sitka Block amendment, shifted their support to one of the Full/Partial block alternatives. ALFA had decided that the Sitka Block proposal was too restrictive particularly for full-time operations which needed to change their holdings of QS.

During the Council's discussion, the idea arose that putting only the relatively small initial allocations into blocks and adding constraints on the number of such blocks that a person could hold in an area would provide the additional protection for the part-time fleet which both block proposals were trying to achieve. Some Council members felt that the "Full Block feature" would be less efficient than the current program and was not needed to accomplish the major objective of the block proposals.

The Council then developed and passed the Modified Block proposed amendment. The Council felt that it would achieve the objective of the other block proposals with less of a loss in efficiency and flexibility for the full-time fleet.

The Modified Block proposal for halibut would retain most of the features of the current IFQ program. The same ownership constraints and the same catcher vessel size categories would continue to apply. Again, trading of QS would not be allowed across vessel categories.

In addition, the Modified Block proposed amendment would add the following features to the halibut and sablefish IFQ plans in an effort to ensure that a diverse group of operations will remain in the fishery.

1. Under the Modified Block proposed amendment, initial allocations of QS worth less than 20,000 pounds of halibut or sablefish IFQ in the implementation year will be placed into blocks. With the exception of the "sweeping up" provisions noted below, QS that is placed into a block will remain permanently in that block. For transfers, the entire block will need to be transferred.
2. A "sweeping up" provision will allow very small blocks to be combined into a fishable amount. The rule used is the same as that used in the Sitka and Full/Partial Block proposals. For halibut, blocks with QS worth less than 1,000 pounds of halibut in the first year of the program can be combined as long as the resulting block does not contain QS that would be (or would have been) worth more than 1,000 pounds of IFQ in the first year of the program. For sablefish, blocks with QS worth less than 3,000 pounds of sablefish in the first year of the program can be combined as long as the resulting block does not contain QS that would be (or would have been) worth more than 3,000 pounds of IFQ in the first year of the program.
3. Under the Modified Block proposed amendment for both halibut and sablefish, initial allocations of QS worth 20,000 pounds or more of IFQ in the implementation year will not be placed into blocks. These "unblocked" QS are divisible and tradeable under the same rules as the current IFQ plan.

4. Under the Modified Block proposed amendment, new ownership constraints would be added. Persons may hold up to two blocks for an area as long as they do not hold any unblocked QS for the area.⁷ If a person holds some unblocked QS for an area, that person can hold only one block for the area. This rule would apply to both fisheries.

These Modified Block alternatives are explained and analyzed in Part III of this report. A brief overview of some of the results of the Modified Block analysis is included in Section 5.0 of this Executive Summary.

⁷In this report, "unblocked" QS will refer to QS that is not confined within a block.

Table 5.1-1 presents estimates of maximum potential consolidation in the halibut fishery under six different Sitka Block alternatives. Alternatives 2H, 3H, and 4H represent alternatives where a person is allowed to own up to three blocks in an area. Alternatives 5H, 6H, and 7H represent alternatives where a person is allowed to own only two blocks in an area.

The six alternatives also differ with respect to the number of vessel categories. QS could not be traded across the vessel categories which applied under any Sitka Block halibut alternatives. The vessel categories used in each alternative are as follows:

1. Alternatives 2H and 5H distinguish between freezer-longliners and catcher vessels. No distinctions are made among catcher vessels.
2. Alternatives 3H and 6H distinguish between freezer-longliners and catcher vessels. Catcher vessels are further divided into two classes; one containing vessels less than or equal to 60 feet in length, and one containing vessels which are greater than 60 feet in length.
3. Alternatives 4H and 7H distinguish between freezer-longliners and catcher vessels. Catcher vessels are further divided into three classes; vessels less than or equal to 35 feet, vessels from 36 to 60 feet, and vessels greater than 60 feet.

Table 5.1-1 shows estimates of the minimum possible number of quota share holders by IPHC area if maximum potential consolidation occurred. As can be seen, the estimated minimum number of block holders would be highest in Area 3A under all of the Sitka Block alternatives. This would also represent an estimate of the minimum number of block holders across all areas should maximum potential consolidation occur. These numbers suggest that the Sitka Block alternatives would reduce maximum potential consolidation relative to the current plan.

The estimates in Table 5.1-1 also suggest that maximum potential consolidation in the halibut fishery would be less if persons could only hold two blocks per area rather than three blocks per area. In contrast, the presence or absence of catcher vessel size categories does not appear to have a substantial impact on maximum potential consolidation.

Table 5.1-2 presents estimates of maximum potential consolidation in the halibut fishery under six different Full/Partial Block alternatives. These alternatives varied with respect to the maximum number of partial blocks which a person could hold in an area (for persons who don't hold full blocks). There were alternatives with a two partial block maximum rule, and alternatives with a three partial block maximum rule. The alternatives also varied with respect to the presence or absence of catcher vessel size category distinctions.

Table 5.1-2 shows estimates of the minimum possible number of quota share block holders by IPHC area if maximum potential consolidation occurred. As can be seen, the estimated minimum number of block holders would be highest in Area 3A under all of the Full/Partial Block alternatives. This would also represent an estimate of the minimum number of block holders across all areas should maximum potential consolidation occur.

These numbers suggest that the Full/Partial Block alternatives would reduce maximum potential consolidation in the halibut fishery relative to the current plan. If actual consolidation is proportional to maximum potential consolidation, then the Full/Partial Block proposal (all alternatives) would reduce actual consolidation in the halibut fishery relative to the current plan.

5.0 SUMMARY AND OVERVIEW OF THE RESULTS

The following sections briefly summarize some of the findings of the analyses of the Sitka Block proposal, the Full/Partial Block proposal, and the Modified Block proposal. Section 5.1 presents estimates of "maximum potential consolidation" in the halibut fishery under each of the alternatives. Section 5.2 presents similar results for the sablefish fishery. Section 5.3 provides a brief discussion on economic and distributional aspects of these proposals.

A major objective of the Sitka Block proposal, the Full/Partial Block proposal, and the Modified Block proposal is to reduce the potential for consolidation relative to the current IFQ plan. Proponents think that placing QS permanently into blocks, creating a large number of relatively small blocks, and restricting the number of blocks (or partial blocks) that a person can hold, will ensure the continued existence of a diverse fleet which includes smaller part-time operations.

The Sitka Block alternatives, the Full/Partial Block alternatives, and the Modified Block alternatives were analyzed to see if the plans reduced "maximum potential consolidation" relative to the current IFQ plan. Maximum potential consolidation is intended to be an estimate of the minimum possible number of QS holders under each alternative. Maximum potential consolidation is not intended to be a forecast of the actual consolidation that will occur under each alternative. Actual consolidation is difficult to forecast. The authors suspect that actual consolidation will be less than maximum potential consolidation under all alternatives including the current IFQ plan.

Which alternative will produce less actual consolidation of QS is unclear. Nevertheless, if actual consolidation is proportional to estimates of maximum potential consolidation, the analyses suggest that there will likely be more QS holders remaining in the fishery under these alternatives than there would be under the current IFQ plan.

5.1 Maximum Potential Consolidation - Halibut Fishery

The authors used the ownership caps specified in the plan to estimate maximum potential consolidation in the halibut fishery. The current IFQ plan served as the status quo alternative in these analyses.

The Supplemental Analysis indicates that the ownership cap restrictions, to the extent that they are enforceable, will prevent the number of QS holders and the number of vessels in the halibut fishery from falling below the following levels:

- | | | |
|----|--------------------------------|---------------|
| 1. | Area 2C-3A halibut (together): | 200 QS owners |
| 2. | Area 4A-4E halibut (together): | 200 QS owners |
| 3. | Area 2C halibut: | 100 QS owners |
| 4. | All areas combined: | 200 QS owners |

The Sitka Block alternatives, the Full/Partial Block alternatives, and the Modified Block alternatives add some additional constraints which would reduce the maximum potential consolidation relative to the current IFQ plan. These results are shown in Table 5.1-1 through 5.1-3 below.

Table 5.1-2 also suggests that maximum potential consolidation in the halibut fishery would be less if persons could only hold two partial blocks per area than it would be if persons could hold three partial blocks per area. In contrast, the presence or absence of catcher vessel size categories again does not appear to have a substantial impact on maximum potential consolidation.

The result that maximum potential consolidation is not substantially impacted by the presence or absence of catcher vessel categories under either the Sitka Block or Full/Partial Block alternatives should be viewed with caution. Catcher vessel categories may have a larger impact on actual consolidation than these results suggest. Even if actual consolidation is not substantially impacted by constraints on transfers across catcher vessel size classes, the distribution of quota share holdings among catcher vessel size class might be impacted by the presence or absence of such constraints.

Table 5.1-3 presents similar estimates for the Modified Block proposed amendment. The table provides estimates of the minimum number of QS holders that would remain in the halibut fishery if maximum potential consolidation occurs under the Modified Block proposed amendment. The table provides breakouts by area, by vessel category within area, and by blocked and unblocked QS within vessel category. The table covers the single alternative which was adopted by the Council at their September meeting.

As explained above, the Council, in adopting the Modified Block proposed amendment, chose a two block maximum per area rule for QS holders who hold no unblocked QS. The Council also retained the vessel categories in the current halibut IFQ plan. These are catcher vessels less than or equal to 35 feet, catcher vessels from 36 to 60 feet, catcher vessels greater than 60 feet and the freezer-longliner class.

The estimated minimum number of block holders is highest in Area 3A under the Modified Block proposed amendment as under the other block alternatives. This also represents an estimate of the minimum number of block holders across all areas should maximum potential consolidation occur.

These numbers suggest that the Modified Block proposed amendment would reduce maximum potential consolidation in the halibut fishery relative to the current plan. If actual consolidation is proportional to maximum potential consolidation, then the Modified Block proposed amendment should reduce actual consolidation in the halibut fishery relative to the current plan.

Maximum potential consolidation under the Modified Block proposed amendment tends to be slightly larger than it would be under similar Sitka Block and Full/Partial Block alternatives with a two block rule.⁸ This is because both the Sitka Block and Full/Partial Block alternatives make it relatively more difficult for a full-time operator to obtain enough QS to reach the ownership constraint. However, maximum potential consolidation under the Modified Block proposed amendment is less than similar Sitka Block and Full/Partial Block alternatives with a three block per area rule.

8

⁸Note that this result does not hold in all areas.

TABLE 5.1-1. Sitka Block Proposal, Halibut. Summary of estimated minimum block holders by management area and alternative.

Area	Alternatives					
	----- 3 Block Rule -----			----- 2 Block Rule -----		
	2H Catcher Freezer	3H 2 Catchers Freezer	4H 3 Catchers Freezer	5H Catcher Freezer	6H 2 Catchers Freezer	7H 3 Catchers Freezer
2C	557	558	558	834	835	836
3A	776	777	778	1,163	1,163	1,164
3B	259	260	260	388	389	390
4A	124	124	125	185	186	187
4B	67	69	69	101	101	102
4C	33	34	34	49	49	49
4D	32	33	33	47	47	47
4E	17	19	19	25	27	27

TABLE 5.1-2. Full/Partial Block Proposal, Halibut. Summary of estimated minimum numbers of block holders by management area. Table shows total block holders, and in parenthesis the percent of total block holders who have full block packages.

Area	3 Partial Blocks			2 Partial Blocks		
	1 Catcher Freezer	2 Catchers Freezer	3 Catchers Freezer	1 Catcher Freezer	2 Catchers Freezer	3 Catchers Freezer
	Alt 3	Alt 5	Alt 7	Alt 2	Alt 4	Alt 6
Total Block Holders (% of Total w/ Full Blocks)						
2C	563 (2)	564 (2)	564 (2)	839 (1)	840 (1)	840 (1)
3A	812 (9)	813 (9)	815 (9)	1,183 (6)	1,184 (6)	1,186 (6)
3B	268 (7)	268 (7)	269 (7)	392 (5)	393 (5)	393 (5)
4A	115 (0)	116 (0)	116 (0)	164 (0)	164 (0)	165 (0)
4B	73 (51)	74 (50)	75 (49)	91 (41)	91 (41)	92 (40)
4C	32 (31)	33 (30)	33 (30)	42 (24)	43 (23)	43 (23)
4D	30 (37)	31 (35)	31 (35)	40 (28)	40 (28)	40 (28)
4E	17 (0)	19 (0)	19 (0)	25 (0)	27 (0)	27 (0)

TABLE 5.1-3. Modified Block Proposal, Halibut. Estimated minimum numbers of persons holding blocked and unblocked QS, by area and vessel class.

Area	QS Type	----- Vessel Category -----					Total QS Holders
		<= 35 feet	35-60 feet	> 60 feet	Freezer/ Longliner	Unknown Length	
2C	Blocked	372	429	15	1	2	819
	Unblocked	0	10	2	0	0	12
	Total	372	439	17	1	2	831
3A	Blocked	403	502	60	2	2	969
	Unblocked	1	46	33	1	0	81
	Total	404	548	93	3	2	1,050
3B	Blocked	69	200	49	3	0	321
	Unblocked	0	9	14	1	0	24
	Total	69	209	63	4	0	345
4A	Blocked	36	66	41	2	0	145
	Unblocked	0	3	10	0	0	13
	Total	36	69	51	2	0	158
4B	Blocked	12	22	26	1	0	61
	Unblocked	0	8	23	2	0	33
	Total	12	30	49	3	0	94
4C	Blocked	12	12	8	1	0	33
	Unblocked	3	4	5	0	0	12
	Total	15	16	13	1	0	45
4D	Blocked	0	8	16	2	0	26
	Unblocked	0	3	10	2	0	15
	Total	0	11	26	4	0	41
4E	Blocked	21	4	1	0	1	27
	Unblocked	0	0	0	0	0	0
	Total	21	4	1	0	1	27

5.2 Maximum Potential Consolidation - Sablefish Fishery

The authors used the ownership caps specified in the IFQ plan to estimate maximum potential consolidation in the sablefish fishery. The status quo alternative used in these analyses was the current IFQ plan.

The Supplemental Analysis indicates that the ownership cap restrictions, to the extent that they are enforceable, will prevent the number of quota share holders and the number of vessels in the sablefish fishery from falling below the following levels:

- | | |
|--------------------------------------------------|-----------------------------|
| 1. EEZ Wide Sablefish | : 100 QS owners & 100 Boats |
| 2. Gulf of Alaska Sablefish
East of 140° West | : 100 QS owners & 100 Boats |

The Sitka Block proposal, the Full/Partial Block proposal, and the Modified Block proposed amendment add some additional constraints which would appear to reduce the maximum potential consolidation relative to the current IFQ plan. These results are shown in Tables 5.2-1 through 5.2-3 below.

Table 5.2-1 presents estimates of maximum potential consolidation in the sablefish fishery under different Sitka Block alternatives. Alternatives 8S and 9S represent alternatives where a person is allowed to own up to three blocks in an area. Alternatives 10S and 11S represent alternatives where a person is allowed to own only two blocks in an area.

The four Sitka Block alternatives also differ with respect to the number of vessel categories. Under all Sitka Block sablefish alternatives, QS could not be traded across the vessel categories which applied. The vessel categories used in each sablefish alternative are as follows:

1. Alternatives 8S and 10S distinguish between freezer-longliners and catcher vessels. No distinctions are made among catcher vessels.
2. Alternatives 9S and 11S distinguish between freezer-longliners and catcher vessels. Catcher vessels are further divided into two classes; one containing vessels less than or equal to 60 feet in length, and one containing vessels which are greater than 60 feet in length.

Table 5.2-1 shows estimates of the minimum possible number of QS block holders by sablefish management area if maximum potential consolidation occurred. As can be seen, the estimated minimum number of block holders would be highest in the Southeast Outside regulatory district under all of the Sitka Block alternatives.

The minimum number of block holders in this area would also represent an estimate of the minimum number of block holders across all areas should maximum potential consolidation occur. These numbers suggest that the Sitka Block alternatives would reduce maximum potential consolidation in the sablefish fishery relative to the current plan.

Table 5.2-1 also suggests that maximum potential consolidation in the sablefish fishery would be less if persons could only hold two blocks per area than it would be if persons could hold three blocks per area. In contrast, the presence or absence of catcher vessel size categories does not appear to have a substantial impact on maximum potential consolidation.

Table 5.2-2 presents estimates of maximum potential consolidation in the sablefish fishery under four different Full/Partial Block alternatives. As can be seen, these alternatives varied with respect to the maximum number of partial blocks which a person could hold in an area (for persons who don't hold full blocks). There were alternatives with a two partial block maximum rule, and alternatives with a three partial block maximum rule. The alternatives also varied with respect to the presence or absence of catcher vessel size category distinctions.

Table 5.2-2 shows estimates of the minimum possible number of quota share block holders by sablefish area if maximum potential consolidation occurred. The estimated minimum number of block holders would be highest in the Southeast Outside regulatory district under all of the Full/Partial Block alternatives. This would also represent an estimate of the minimum number of block holders across all areas should maximum potential consolidation occur. These numbers suggest that the Full/Partial Block alternatives would reduce maximum potential consolidation in the sablefish fishery relative to the current plan.

Table 5.2-2 also suggests that maximum potential consolidation in the sablefish fishery would be less if persons could only hold two blocks per area than it would be if persons could hold three blocks per area. In contrast, the presence or absence of catcher vessel size categories again does not appear to have a substantial impact on maximum potential consolidation.

If actual consolidation is proportional to maximum potential consolidation, then both the Sitka Block and Full/Partial Block proposals (all alternatives) would reduce actual consolidation in the sablefish fishery relative to the current plan. The result that maximum potential consolidation is not substantially impacted by the presence or absence of catcher vessel size categories should be viewed with caution. Catcher vessel categories may have a larger impact on actual consolidation than these results suggest. Even if consolidation is not substantially impacted by constraints on transfers across catcher vessel size classes the distribution of quota share holdings by vessel class might be impacted by the presence or absence of such constraints.

Table 5.2-3 presents similar estimates for the Modified Block proposed amendment. The table provides estimates of the minimum number of QS holders that would remain in the sablefish fishery if maximum potential consolidation occurs under the Modified Block proposed amendment. This table provides estimates for the single alternative which was adopted by the Council at their September meeting.

As explained above, the Council, in adopting the Modified Block proposed amendment, chose a two block maximum per area rule for QS holders who hold no unblocked QS. The Council also retained the vessel categories in the current sablefish IFQ plan. These are catcher vessels less than or equal to 60 feet, catcher vessels greater than 60 feet and the freezer-longliner class.

The estimated minimum number of block holders is highest in the combined Southeast Outside regulatory area under the Modified Block proposed amendment as under the other block alternatives. This also represents an estimate of the minimum number of block holders across all areas should maximum potential consolidation occur.

These numbers suggest that the Modified Block proposed amendment would reduce maximum potential consolidation in the sablefish fishery relative to the current plan. If actual consolidation is proportional to maximum potential consolidation, then the Modified Block proposed amendment should reduce actual consolidation in the sablefish fishery relative to the current plan.

Maximum potential consolidation under the Modified Block proposed amendment tends to be somewhat greater than it would be under similar Sitka Block and Full/Partial Block alternatives with a two block rule. This is because both the Sitka Block and Full/Partial Block alternatives make it relatively more difficult for a full-time operator to obtain enough QS to reach the ownership constraint. However, maximum potential consolidation under the Modified Block proposed amendment tends to be less than similar Sitka Block and Full/Partial Block alternatives with a three block per area rule.⁹

TABLE 5.2-1. Sitka Block Proposal, Sablefish. Summary of estimated minimum block holders by management area and alternative.

Area	Alternatives			
	----- 3 Block Rule -----		----- 2 Block Rule -----	
	8S Catcher Freezer	9S 2 Catchers Freezer	10S Catcher Freezer	11S 2 Catchers Freezer
Aleutians	42	43	63	64
Bering Sea	39	40	59	60
Central Gulf	148	149	221	222
Western Gulf	52	53	78	79
West Yakutat	102	103	153	155
Southeast Outside	186	187	278	280

TABLE 5.2-2. Full/Partial Block Proposal, Sablefish. Summary of estimated minimum numbers of block holders by management area. Table shows total block holders, and in parenthesis the percent of total block holders who have full block packages.

Area	3 Partial Blocks		2 Partial Blocks	
	1 Catcher Freezer	2 Catchers Freezer	1 Catcher Freezer	2 Catchers Freezer
	Alt 3	Alt 5	Alt 2	Alt 4
Total Block Holders (% of Total w/ Full Blocks)				
Aleutians	46 (20)	46 (20)	64 (14)	64 (14)
Bering Sea	42 (12)	42 (12)	60 (8)	60 (8)
Central Gulf	162 (19)	165 (18)	227 (13)	230 (13)
Western Gulf	57 (16)	58 (17)	79 (11)	80 (13)
West Yakutat	106 (13)	107 (13)	152 (9)	153 (9)
Southeast Outside	203 (32)	205 (31)	273 (23)	275 (23)

⁹Note that these results do not hold in all areas.

TABLE 5.2-3. Modified Block Proposal, Sablefish. Estimated minimum numbers of persons holding blocked and unblocked QS, by area and vessel class.

Area	QS Type	----- Vessel Class -----				Total QS Holders
		<= 60 feet	> 60 feet	Freezer/ Longliner	Unknown Length	
Aleutians	Blocked	15	13	6	0	34
	Unblocked	2	3	6	0	11
	Total	17	16	12	0	45
Bering Sea	Blocked	18	11	7	0	36
	Unblocked	1	2	2	0	5
	Total	19	13	9	0	41
Central Gulf	Blocked	84	23	3	3	113
	Unblocked	16	14	5	0	35
	Total	100	37	8	3	148
Western Gulf	Blocked	25	16	7	0	48
	Unblocked	3	4	4	0	11
	Total	28	20	11	0	59
West Yakutat	Blocked	68	24	3	2	97
	Unblocked	7	7	1	0	15
	Total	75	31	4	2	112
Southeast Outside	Blocked	146	16	2	4	168
	Unblocked	60	14	1	0	75
	Total	206	30	3	4	243

5.3 Other Results Of The Analyses

Parts I, II and III of this draft EA/RIR/IRFA identify a number of aspects of the Sitka Block, Full/Partial Block, and Modified Block alternatives which might change some of the costs and benefits of the IFQ program relative to the current plan. Both distributional and economic efficiency impacts are discussed.

The Sitka Block, Full/Partial Block, and Modified Block alternatives were examined with respect to maximum potential consolidation. The additional constraints in the alternatives appear to reduce the maximum potential consolidation of QS relative to the current IFQ plan. If actual consolidation is reduced then there will be more boats and persons in the fishery which may make monitoring and enforcement of the program more difficult and/or more expensive.

The Sitka Block, Full/Partial Block, and Modified Block proposals could impact the net economic benefits generated by the proposed IFQ program in other ways. To the extent that some profitable opportunities for consolidation of QS may be lost relative to the current plan, the net economic benefits generated by the IFQ program may be reduced.

In the original versions of the Sitka Block and Full/Partial Block proposals, current restrictions on transferring QS across catcher vessel size categories have been removed. Under these alternatives, it is possible that some profitable consolidations could be carried out which are not allowed under the current plan.

The variable size blocks which would be created under the Sitka Block alternatives will increase the search and transactions costs of persons who want to purchase or sell additional QS. Each block would be unique and therefore it would be more difficult to find willing buyers or sellers with the approximate amount of QS desired.

Because of the limit on the number of blocks a person can hold in an area, some persons might have to both buy and sell blocks of appropriate size in order to reach the new level of QS they want. This increase in fishermen's search and transactions costs may reduce net economic benefits under the Sitka Block alternatives relative to the current IFQ program.

The partial blocks created under the Full/Partial Block proposal would have similar impacts on the search and transactions costs associated with transfers. Full blocks should have less of an impact because they are homogeneous by area and vessel category. Nevertheless, the lack of "divisibility" of a full block may still lead to some cost increases relative to the current plan.

The blocks created under the Modified Block proposal and the constraints on block ownership will also add to search and transactions costs relative to the current IFQ plan. However, under the Modified Block alternatives, persons who want to purchase relatively small amounts of QS can always opt to buy unblocked QS. This should help to mitigate the higher search and transaction costs associated with blocked QS. If part-time operations prove to be more economically efficient than imagined by block proponents, unblocked QS will provide another means for additional part-time operators to obtain desired amounts of QS.

The Sitka Block, Full/Partial Block, and Modified Block proposals may have impacts on administrative and enforcement costs as well as the IFQ management tasks that will need to be performed. If more vessels would remain in the fishery due to a block amendment, the IFQ program might be more

difficult to monitor and enforce. The need to track and monitor additional sets of constraints may also increase administrative and enforcement costs.

However, some aspects of these proposals may reduce the administrative and enforcement costs or release some resources to do a better job on other IFQ management tasks. For example, the original Sitka Block and Full/Partial Block proposals would eliminate catcher vessel size categories. If this occurred, NMFS would no longer have to be concerned about the actual size of a vessel during the initial allocation process, and would not have to monitor landings and landing records to make sure that a person's quota shares were being used on a vessel of appropriate size.

The increased search and transactions costs associated with QS transfers under these block proposals may lead to a reduction in the volume of transfers per person. If the proposal results in a reduction in the overall volume of transfers, NMFS may be able to redirect resources to work on other administrative or enforcement tasks, such as monitoring the larger number of operations or administering and enforcing the new block constraints.

An environmental assessment (EA) is required by the National Environmental Policy Act of 1969 (NEPA) to determine if the action considered will result in significant impact on the human environment. Under NEPA an action has a significant impact if it jeopardizes the productive capability of the stocks, damages ocean and coastal habitats, adversely impacts public health or safety, adversely affects endangered species or marine mammals, or has cumulative effects on stocks. If an action is determined to not be significant based on an analysis of relevant considerations, the EA and the resulting finding of no significant impact (FONSI) would be the final environmental documents required by NEPA.

The Sitka Block, Full/Partial Block, and Modified Block alternatives may lead to increases in the number of active operations compared to the IFQ plan. However they should not increase harvests or reintroduce a derby-style fishery. Many aspects of the current IFQ plan would be preserved. The block alternatives should not jeopardize the productive capability or have a cumulative effect on stocks, damage ocean and coastal habitats, adversely impact public health or safety, adversely affect endangered species, or adversely affect marine mammals. In summary, none of the block proposals should have a significant impact under NEPA.

The Sitka Block, Full/Partial Block, and Modified Block proposals would affect all the persons who would initially be issued IFQ under the halibut and sablefish plans. This includes an estimated 5,484 halibut quota holders and 1,121 sablefish quota holders. Almost all of these operators are small businesses according to accepted NMFS definitions.¹⁰

None of the block proposals would substantially alter the aggregate gross revenues received by the fleet, although if they lead to an increase in the number of separate operations they may reduce the fleet's average gross revenues. None of the proposals should significantly increase the fleet's administrative paperwork or record-keeping requirements. Since almost all the operations within the fleet are small businesses within the meaning of the act, there will be no differential compliance cost impact between large and small business sectors.

¹⁰See Supplemental Analysis, page 7-7.

It is unlikely that any of the block proposals would result in annual effects of over \$100 million relative to the current plan. None of the block proposals should be considered a significant regulatory action under Executive Order 12866.

PART I

DRAFT FOR SECRETARIAL REVIEW

ENVIRONMENTAL ASSESSMENT

**REGULATORY IMPACT REVIEW/
INITIAL REGULATORY FLEXIBILITY ANALYSIS**

FOR THE

**"SITKA BLOCK" PROPOSED AMENDMENT
TO THE INDIVIDUAL FISHING QUOTA MANAGEMENT ALTERNATIVE
FOR ALASKA'S FIXED GEAR HALIBUT AND SABLEFISH FISHERIES**

GULF OF ALASKA

AND

BERING SEA/ALEUTIAN ISLANDS

Prepared by:
Alaska Commercial Fisheries Entry Commission
National Marine Fisheries Service

May 25, 1994

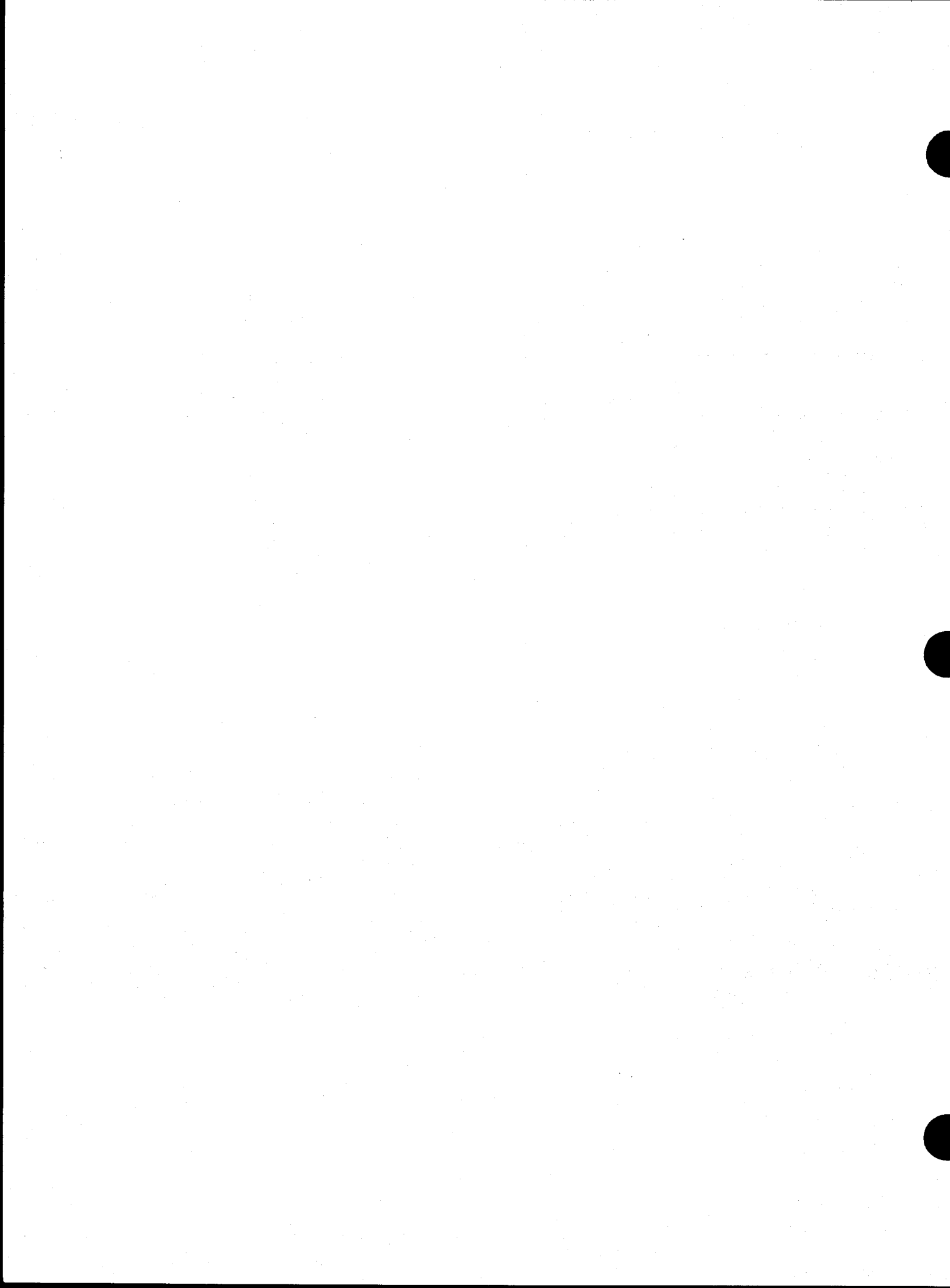


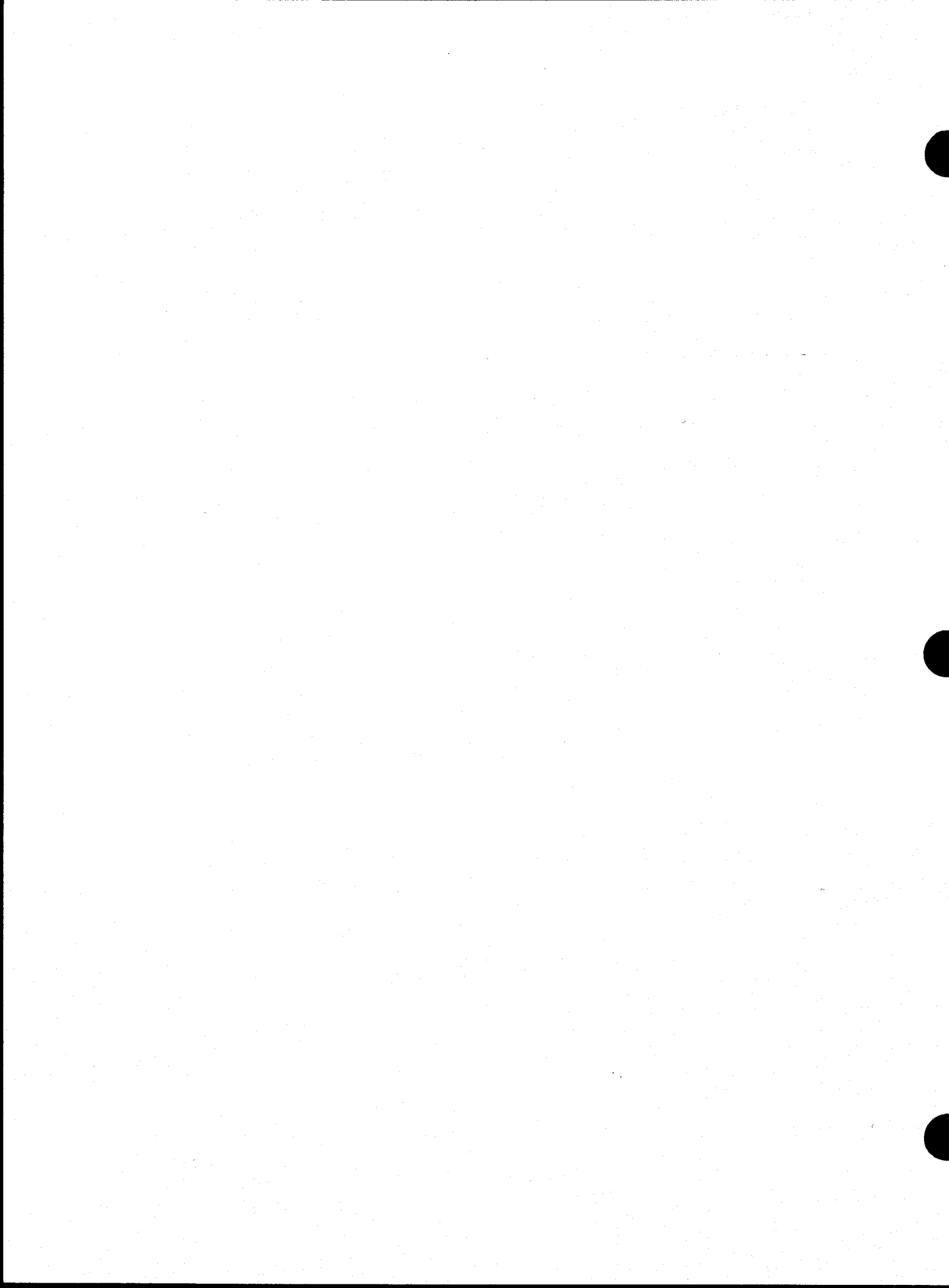
TABLE OF CONTENTS

1.0	INTRODUCTION	27
1.1	Management Background	27
1.2	Purpose and Need For The Action	30
1.3	Alternatives Considered	33
1.3.1	Alternative 1: Status Quo: The Current IFQ Plan	38
1.3.2	Alternative 2H: Catcher Boat/Freezer-Longliner Distinction Only, Three Block Maximum Consolidation Rule.	39
1.3.3	Alternative 3H: Catcher Boats Divided Into Two Classes, Catcher Boat/Freezer Longliner Distinction Maintained, Three Block Maximum Consolidation Rule.	39
1.3.4	Alternative 4H: Catcher Boat Size Classes Are Maintained, Catcher Boat/Freezer-Longliner Distinction Maintained, Three Block Maximum Consolidation Rule.	39
1.3.5	Alternative 5H: Catcher Boat/Freezer-Longliner Distinction Only, Two Block Maximum Consolidation Rule.	39
1.3.6	Alternative 6H: Catcher Boats Divided Into Two Classes, Catcher Boat/Freezer-Longliner Distinction Maintained, Two Block Maximum Consolidation Rule.	40
1.3.7	Alternative 7H: Catcher Boat Size Classes Are Maintained, Catcher Boat/Freezer-Longliner Distinction Maintained, Two Block Maximum Consolidation Rule.	40
1.3.8	Alternative 8S: Catcher Boat/Freezer-Longliner Distinction Only, Three Block Maximum Consolidation Rule.	40
1.3.9	Alternative 9S: Catcher Boats Divided Into Two Classes, Catcher Boat/Freezer Longliner Distinction Maintained, Three Block Maximum Consolidation Rule.	40
1.3.10	Alternative 10S: Catcher Boat/Freezer-Longliner Distinction Only, Two Block Maximum Consolidation Rule.	40
1.3.11	Alternative 11S: Catcher Boats Divided Into Two Classes, Catcher Boat/Freezer-Longliner Distinction Maintained, Two Block Maximum Consolidation Rule.	41
1.3.12	Summary of Sitka Block Alternatives	41
1.4	Estimation Of Halibut Blocks Under The Sitka Block Alternatives	42
1.5	Estimation Of Sablefish Blocks Under The Sitka Block Alternatives	47
2.0	NEPA REQUIREMENTS: ENVIRONMENTAL IMPACTS OF THE ALTERNATIVES	53
2.1	Environmental Impacts of the Alternatives	53
2.2	Impacts on Threatened or Endangered Species	54
2.3	Impacts On Marine Mammals	56
2.4	Conclusions or Findings of No Significant Impact	57

3.0	REGULATORY IMPACT REVIEW: SOCIAL AND ECONOMIC IMPACTS OF THE ALTERNATIVES	59
3.1	Alternative 1: The Status Quo: The Current IFQ Plans	60
3.2	Alternative 2H: Catcher Boat / Freezer-Longliner Distinction Only, Three Block Max Consolidation Rule	61
3.3	Alternative 3H: Two Catcher Boat Categories, Catcher Boat/Freezer-Longliner Distinction Maintained, Three Block Max Consolidation Rule.	64
3.4	Alternative 4H: Three Catcher Boat Categories, a Freezer-Longliner Class, Three Block Max Consolidation Rule.	66
3.5	Alternative 5H: Catcher Boat / Freezer-Longliner Distinction Only, Two Block Max Consolidation Rule	68
3.6	Alternative 6H: Two Catcher Boat Categories, a Freezer-Longliner Class, Two Block Max Consolidation Rule.	70
3.7	Alternative 7H: Three Catcher Boat Categories, a Freezer-Longliner Class, Two Block Max Consolidation Rule.	73
3.8	Alternative 8S: Catcher Boat/Freezer-Longliner Distinction Only, Three Block Max Consolidation Rule	76
3.9	Alternative 9S: Two Catcher Boat Categories, a Freezer-Longliner Class, Three Block Max Consolidation Rule.	79
3.10	Alternative 10S: Catcher Boat / Freezer-Longliner Distinction Only, Two Block Max Consolidation Rule	81
3.11	Alternative 11S: Two Catcher Boat Categories, a Freezer-Longliner Class, Two Block Max Consolidation Rule.	83
3.12	Reporting Costs	86
3.13	Administrative, Enforcement and Information Costs	86
3.14	Economic Efficiency Implications of the Sitka Block Proposed Amendment	87
	3.14.1 Increased Search and Transactions Costs	87
	3.14.2 Net Economic Benefits Resulting From Consolidation.	88
	3.14.3 New Restrictions On Financing	89
3.15	Discussion of Other Aspects of the Proposed Amendment	89
3.16	Summary of Economic Impacts: Distribution of Costs and Benefits	91
4.0	INITIAL REGULATORY FLEXIBILITY ANALYSIS	93
4.1	Economic Impact on Small Entities	93
5.0	SUMMARY AND CONCLUSIONS	95
6.0	REFERENCES	97
7.0	AGENCIES AND INDIVIDUALS CONSULTED	99
8.0	LIST OF PREPARERS	101
	APPENDIX I	103
	APPENDIX II	111

LIST OF TABLES

TABLE 1.3-1.	Halibut Ownership Cap Constraints	35
TABLE 1.3-2.	Halibut Maximum Block Sizes By Area	35
TABLE 1.3-3.	Sablefish Ownership Cap Constraints	36
TABLE 1.3-4.	Sablefish Maximum Block Sizes	37
TABLE 1.4-1.	Distribution of halibut IFQ blocks. The table shows blocks 1) as they currently stand, 2) after the split of blocks that exceed the maximum block size, and 3) after the blocks less than 1,000 lbs IFQ are consolidated (assuming 1991 TACs).	44
TABLE 1.4-2.	Estimated total IFQ pounds for halibut vessel owners by area and IFQ class (1991 TACs).	46
TABLE 1.4-3.	Cumulative estimated amount of IFQ pounds for halibut vessel owners by area and IFQ class (1991 TACs).	46
TABLE 1.5-1.	Distribution of sablefish IFQ blocks. Table shows blocks 1) as they currently stand, 2) after the split of blocks that exceed the proposed maximum block size, and 3) after the blocks under 3,000 lbs. IFQ are consolidated (assuming 1991 TACs).	49
TABLE 1.5-2.	Estimated total IFQ pounds for sablefish vessel owners by area and IFQ class (1991 TACs).	51
TABLE 1.5-3.	Cumulative estimated amount of IFQ pounds for sablefish vessel owners by area and IFQ class (1991 TACs).	51
TABLE 3.2.	Sitka Block Alternative 2H: HALIBUT Estimated maximum consolidation of blocks by catcher and freezer boat class	63
TABLE 3.3.	Sitka Block Alternative 3H: HALIBUT Estimated maximum consolidation of blocks by vessel length class over and under 60 feet	65
TABLE 3.4.	Sitka Block Alternative 4H: HALIBUT Estimated maximum consolidation of blocks by vessel length class	67
TABLE 3.5.	Sitka Block Alternative 5H: HALIBUT, 2 Block Rule Estimated maximum consolidation of blocks by catcher and freezer boat class	69
TABLE 3.6.	Sitka Block Alternative 6H: HALIBUT, 2 Block Rule Estimated maximum consolidation of blocks by vessel length class over and under 60 feet	72
TABLE 3.7.	Sitka Block Alternative 7H: HALIBUT, 2 Block Rule Estimated maximum consolidation of blocks by vessel length class	75
TABLE 3.8.	Sitka Block Alternative 8S: SABLEFISH Estimated maximum consolidation of blocks by catcher and freezer boat class	78
TABLE 3.9.	Sitka Block Alternative 9S: SABLEFISH Estimated maximum consolidation of blocks by vessel length class over and under 60 feet	80
TABLE 3.10.	Sitka Block Alternative 10S: SABLEFISH, 2 Block rule Estimated maximum consolidation of blocks by catcher and freezer boat class	82
TABLE 3.11.	Sitka Block Alternative 11S: SABLEFISH, 2 Block rule Estimated maximum consolidation of blocks by vessel length class over and under 60 feet	85



1.0 INTRODUCTION

The groundfish fisheries in the Exclusive Economic Zone (EEZ) (3 to 200 miles offshore) of the Gulf of Alaska (GOA) and Bering Sea and Aleutian Islands Area (BSAI) are managed under the Fishery Management Plan (FMP) for the Groundfish of the GOA and the FMP for the Groundfish of the BSAI. Both FMPs were developed by the North Pacific Fishery Management Council (Council) under the Magnuson Fishery Conservation and Management Act (Magnuson Act). The GOA FMP was approved by the Secretary of Commerce and become effective in 1978 and the BSAI FMP become effective in 1982. Sablefish, which is a groundfish, is regulated under these FMPs.

The domestic fishery for halibut in and off of Alaska is managed by the International Pacific Halibut Commission (IPHC) as provided by the Convention between the United States and Canada for the Preservation of the Halibut Fishery of the Northern Pacific Ocean and the Bering Sea (Convention), signed at Washington on March 29, 1979, and the Northern Pacific Halibut Act of 1982.

While the IPHC has the primary authority for managing the halibut resource for biological conservation purposes, the Halibut Act authorizes the appropriate Regional Fishery Management Councils established by the Magnuson Act to develop regulations that are in addition to, but not in conflict with, regulations adopted by the IPHC affecting the U.S. halibut fishery. Under this authority, the North Pacific Fishery Management Council (Council) may develop, for approval by the Secretary of Commerce (Secretary), limited access regulations for the Pacific halibut fishery in Convention waters in and off of the State of Alaska that are consistent with criteria set forth in Section 303(b) (6) of the Magnuson Act. The Council does not, however, have an FMP for halibut.

Actions taken to amend Fishery Management Plans or implement other regulations governing the groundfish fisheries and actions taken by the Secretary to implement regulations governing the halibut fishery must meet the requirements of Federal laws and regulations. Among the most important of these are the National Environmental Policy Act (NEPA), the Endangered Species Act (ESA), the Marine Mammal Protection Act (MMPA), Executive Order (E.O.) 12866, and the Regulatory Flexibility Act (RFA).

NEPA, E.O. 12866, and the RFA require a description of the purpose and need for the proposed action as well as a description of alternative actions which may address the problem. This information is included in Chapter 1 of this document. Chapter 2 contains information on the biological and environmental impacts of the alternatives as required by NEPA. Impacts on endangered species and marine mammals are also addressed in this section. Chapter 3 contains a Regulatory Impact Review (RIR) which addresses the requirements of both E.O. 12866 and the RFA that economic impacts of the alternatives be considered. Chapter 4 contains the Initial Regulatory Flexibility Analysis (IRFA) required by the RFA which specifically addresses the impacts of the proposed action on small businesses.

This Environmental Assessment/Regulatory Impact Review/Initial Regulatory Flexibility Analysis (EA/RIR/IRFA) addresses the Sitka Block Proposed Amendment to the current IFQ plans for halibut and sablefish.

1.1 Management Background

The following is a summary of the Council's previous actions with respect to Alaska's halibut and sablefish fishery. This summary is largely taken from earlier reports which describe the Council's actions in greater detail. A listing of previous reports can be found in Chapter 6.0.

The commercial harvest of halibut off Alaska began in the 1890s. Management of halibut was originally controlled by both the United States and Canada off of their respective coasts. In 1923 the International Pacific Halibut Commission (IPHC) was established by a convention between the United States and Canada to manage the halibut fishery. An additional treaty was signed in 1953 and was amended by protocol in 1979. The IPHC has authority to establish regulatory areas, limit catch by area, license vessels, regulate gear types, protect nursery areas, collect statistics and conduct scientific research.

In 1982, the U.S. government added to the management tools available for halibut by delegating additional regulatory authority to the geographically responsible Fishery Management Councils (Northern Pacific Halibut Act of 1982, P.L. 97-176). Among other authorities, this act allows the Councils to develop limited entry consistent with the criteria in Section 303(b)(6) of the Magnuson Act (MFCMA) for approval by the Secretary.

The Magnuson Act also prohibited foreign fishing for halibut in the 200-mile Exclusive Economic Zone (EEZ). The North Pacific Management Council (Council), by virtue of its geographical under the Magnuson Act and the Halibut Act, may develop regulations for halibut off the coast of Alaska.

In December of 1991, the Council recommended an Individual Fishing Quota (IFQ) Program for management of the "fixed gear" sablefish and halibut fisheries off of Alaska. "Fixed Gear" was defined to include all hook and line fishing gears (longlines, jigs, handlines, and troll gear). The IFQ plan for halibut was approved as a regulatory amendment by the Secretary of Commerce in early 1993.

The decision followed several years of discussions about how to best contain effort in these fisheries. The Council became concerned about a rapidly growing halibut fleet and shrinking seasons in 1978. In November 1978, the Council set a December 31, 1978 cut-off date for eligibility in the eventuality that an access control program would be developed for halibut in the near future. In 1979, Council workgroups discussed different methods to limit access to the fishery.

During this same time period, the Council studied limited entry options. The Council contracted with Northwest Resources Analysis of Seattle, Washington to prepare a study of limited access options in the halibut fishery (Northwest Resource Analysis 1983). The report concluded that an IFQ system of management had the greatest potential for resolution of problems in the fishery and estimated that the potential net benefits from such a system would be at least \$5.373 million.

A moratorium on entry into the halibut fisheries was recommended by the Council in 1983, but was rejected by the Secretary of Commerce. This moratorium was recommended as an interim measure in response to shrinking seasons and other management problems associated with a derby-style fishery.

In the mid-1980s the Council began to consider effort management alternatives for the sablefish fishery. This fishery was developing into a derby-style fishery similar to the halibut fisheries. In 1985 the Council began exploring options to open access by soliciting input from the industry on potential management alternatives.

In 1987 the Council took another step toward limited entry by adopting a Statement of Commitment which dedicated the Council to "develop strategies for license limitation or the use of individual transferable quotas in the sablefish fixed gear fishery." The Council held public workshops in 1988 to explore management options to change the derby-style fishery.

In mid-1988 the Council directed its staff to develop and analyze five management options for the sablefish fixed gear fishery: (1) continued open access without modifications, (2) modified open access, (3) individual fishing quotas, (4) license limitation, and (5) a combined license, quota, and open access system. In December of 1988, after reviewing a draft analysis document, the Council declared the status quo (open access) as unacceptable and expressed a desire to further explore the options of license limitation and IFQs.

In early 1989, the Council notified the public that it was considering similar limited entry management options for all fisheries, particularly for the halibut fishery off Alaska. In November of 1989 the Council reviewed a Supplemental Environmental Impact Statement (SEIS) which analyzed four options for future management of the sablefish fisheries off Alaska: (1) continued open access, (2) license limitation, (3) IFQs, and (4) a combination system called annual fishing allotments or AFAs.

Based upon the analysis contained in the SEIS, the Council decided that license limitation and annual fishing allotments were not viable alternatives to solve the problems facing the sablefish fixed gear fisheries. In April of 1990 the Council reviewed the Supplement to the SEIS which analyzed specific IFQ programs against the open access alternatives.

In December of 1990, the Council directed staff to prepare a revised Supplement which analyzed various forms of an IFQ management alternative for sablefish. The four IFQ systems analyzed depicted a range of alternatives in terms of qualification periods, transferability restrictions, ownership caps, community development quotas, and other system specifics. At that time, the Council directed staff to analyze a similar set of IFQ alternatives for the halibut fishery with the intent that the IFQ program would eventually include both sablefish and halibut.

The revised Supplement to the SEIS for sablefish fishery management was released for public review on May 14, 1991. An Environmental Impact Statement (EIS) on IFQ alternatives for the halibut fishery was released for public review on July 19, 1991. The Council wanted to ultimately submit a combined package and postponed decisions on both fisheries until the September 1991 meeting.

In September of 1991 the Council provisionally recommended an IFQ management alternative for both fisheries. The Council established an IFQ implementation team comprised of staff from various government agencies and representatives from affected industry groups. The team was to produce an implementation plan for Council and public review prior to the December 1991 meeting.

The Draft Implementation Plan was made available for public review and a public hearing was held prior to the December 1991 meeting. At the December 1991 meeting, the Council made some minor revisions in their IFQ plans for sablefish and halibut, and recommended a halibut and sablefish IFQ alternative.

When the Council passed the proposed IFQ program for the sablefish and halibut fisheries in December of 1991, the Council recognized that they might need to consider proposals to further adjust aspects of the program. The Council delayed sending their IFQ plan amendment (regulatory amendment for halibut) to the Secretary of Commerce so that further analysis of their plan could be completed.¹

¹See Supplemental Analysis Of The Individual Fishing Quota Management Alternative For Fixed Gear Sablefish and Halibut Fisheries - Gulf of Alaska and Bering Sea/Aleutian Islands (March 27, 1992). For brevity, this report will be referred to as the Supplemental Analysis herein.

At the April 1992 meeting, the Council rejected a motion to rescind its earlier vote and directed that the IFQ plan amendment package be forwarded to the Secretary of Commerce. The proposed IFQ programs for sablefish and halibut were approved by the Secretary of Commerce in early 1993.

At the April 1992 meeting, the Council also asked staff to analyze two proposed amendments to the IFQ plans which they had adopted. The first was called the "Sitka Block" proposal² and the second was called the "1,000 Pound Minimum IFQ" proposal. At the June 1992 meeting, the Council asked staff to analyze a third proposal which has been named the "Full/Partial Block" proposal.

All of the three proposals were developed to attempt to address concerns about the current IFQ plan for halibut and sablefish. The two block proposals were to apply to both the sablefish and halibut fisheries. The "1,000 pound minimum IFQ" proposal was to apply to the halibut fishery only. The State of Alaska agreed to analyze all three proposals and asked the Commercial Fisheries Entry Commission to conduct the analyses.

Discussion draft reports on the three proposals were presented to the Council and Advisory Panel (AP) at their September 1992 meeting. These reports were sent out for public comment in October of 1992 and again presented to the Council at their January 1993 meeting.³

At the January 1993 meeting, the Council adjusted the alternatives under each proposal and asked that an EA/RIR/IRFA be prepared for each of the proposals. They asked for a single report on the two block proposals and a separate report on the "1,000 Pound Minimum IFQ" proposal.

At their June 1993 meeting, the Council examined the draft EA/RIR/IRFA for Council Review which covered both the Sitka Block and Full/Partial Block proposed amendments. The Council recommended that the report be sent out for public review with minor editorial changes. At that meeting, the Council dropped the "1,000 Pound Minimum IFQ" proposal from further consideration after reviewing the draft EA/RIR/IRFA.

Part I of this EA/RIR/IRFA presents the analysis of the Sitka Block Proposal.

1.2 Purpose and Need For The Action

Many persons fear that there will be a large consolidation of QS under the current plan and they are concerned that such an extensive consolidation will be harmful to the traditional fishing economies of some Alaska coastal communities.⁴ The Sitka Block Proposal was developed as a potential means to address these concerns.

Supporters of the Sitka Block Proposal would like to obtain some of the benefits associated with an IFQ program but would like to reduce the opportunities for consolidation of quota shares (QS)

² The Sitka Block proposal was first presented to the Alaska Longline Fisherman's Association by Howard Pendell.

³ At the request of the Council, the reports on the two block proposals were combined into a single discussion draft report.

⁴ For example, see Socioeconomic Impacts Of The Proposed IFO System On Southeast Alaska Communities, April 1992. This report was prepared for the Sealaska Corporation by The McDowell Group.

relative to the current plan. In doing so, they hope to maintain a relatively large, diverse fleet and protect "the socioeconomic health of the Alaska coastal communities."

The Sitka Block Proposal would alter aspects of the recently adopted IFQ programs for halibut and sablefish. Under the current IFQ plan, quota shares would be largely based upon a person's "qualifying pounds" over a stated time period.⁵ The distribution of QS, coupled with annual Total Allowable Catch (TAC), would then be used to determine the distribution of IFQs in each year.

Under the current IFQ plan, a person could permanently trade or sell any portion of their QS for a particular area, species, and vessel category. Persons can accumulate QS and IFQ under the plan as long as they do not exceed ownership "caps" specified in the plan or other transfer restrictions.⁶

The Sitka Block proposed amendment would allocate QS in the same amounts as the current plan. However, it would alter the present plan by placing a person's initial allocation of QS into a block(s) and requiring permanent transfers of QS to be "tied" to the block. It would also add a new ownership capacity constraint by restricting the number of blocks that a person could hold.

The specifics of the original proposal were provided in a proposed amendment submitted by Linda Behnken which can be found in Appendix A. The basics of the proposal are as follows:

1. Initial quota share allocations for each area shall be attached to a quota share license (QSL) or block.⁷ QS shall remain "tied" to a block and may only be permanently sold or transferred in their entirety. There are the following two exceptions to this proposed rule:
 - a. Halibut blocks in an area which have QS worth less than 1,000 pounds in the first year of the program may be combined as long as the resulting block does not exceed 1,000 pounds of IFQ.

⁵While quota shares are largely based on qualifying pounds, some changes in quota shares may occur because of Community Development Quotas (CDQ) and the CDQ compensation requirement in the plan. As the Final Rule does not contain precise formulation of the CDQ compensation methodology, the small quota share adjustments due to CDQ compensation have not been considered in the analysis herein.

⁶Persons may exceed a cap by initial allocation, but such persons are prohibited from obtaining any more quota shares unless and until their holdings fall below the caps. Such persons cannot transfer shares to another if that person would then exceed an ownership cap.

⁷The original proposal suggested that vessel classes could be dropped if the block proposal were adopted. However, the originators of the proposal asked that the analysis include alternatives where the current vessel classes for catcher boats are maintained. If vessel classes are included, QS allocations and blocks would be area and vessel class specific.

- b. Sablefish blocks in an area which have QS worth less than 3,000 pounds in the first year of the program may be combined as long as the resulting block does not exceed 3,000 pounds of IFQ.⁸
2. In the initial allocation, IFQs arising from a block should not exceed more than 1/2 of the specified ownership cap. In the discussions below, 1/2 of the specified ownership cap will be designated the "maximum block size".

A person who receives an initial allocation of QS in an area in excess of the maximum block size will be issued QS in multiple blocks. For example, a person with QS in an area equal to 1.5 times the maximum block size will be issued one block equal to the maximum block size and one block equal to .5 times the maximum block size.
3. All permanent sales or transfers of block will be free and clear of all control, fiduciary trust, and/or future contract.
4. In the original version of the Sitka Block proposal, the catcher vessel categories in the current plan would be eliminated, while the freezer-longliner distinction would be maintained. Some of the alternative versions of the proposed amendment discussed below maintain catcher boat categories and the restrictions on transferring QS among different vessel categories.
5. An additional consolidation constraint is added under the Sitka Block proposed amendment. In the original version, a person could not accumulate more than three blocks in an area, although the person could hold up to four blocks for a short period of time to help facilitate transfers. The original proposal also suggested that not more than five blocks could be fished from one boat.

Our discussions with the proponents of the Sitka Block proposal indicated that they would want the quota share leasing provisions to remain identical with those in the current plan. Thus while QS can only be permanently transferred as a block, the block can be divided, to a limited extent, for purposes of seasonal transfers of IFQs.

Supporters of the Sitka Block proposed amendment believe that it will help answer concerns about the impacts of the IFQ program on the small boat fleet and on Alaska coastal communities. They think that the proposed amendment would significantly increase support for IFQs in Southeast Alaska and statewide by responding to frequently voiced objections raised by industry and community members.

Supporters believe the proposal will provide protection for the resource without jeopardizing the future of the small boat fleet or the economies of coastal communities. They think that (if vessel

⁸Blocks will contain QS and not IFQs. The IFQs associated with a block will vary each year depending upon the TAC in the area and the total number of QS outstanding. To make these two consolidation rules operational, the Council may need to define them in terms of quota shares. That amount of IFQ associated with those QS may be above or below the originally specified IFQ thresholds in subsequent years.

categories are eliminated) the proposal will achieve the same fleet diversity more simply and effectively than do vessel classes under the current plan.⁹

Proponents suggest that the provisions of the Sitka Block proposed amendment will:

1. Ensure the continued existence of a relatively large, diverse fleet.
2. Provide protection to coastal communities. Because small boats tend to be locally based, traditional delivery patterns will continue.
3. Provide an entry level fishery accessible to deckhands and other small, independent operators. The abundance of small quota share "blocks" will reduce the cost per pound of these blocks.
4. Simplify implementation, monitoring, and enforcement by eliminating the need for vessel size classes and significantly reduce the number of discreet blocks that may be bought or sold.

Supporters of the Sitka Block proposal think that it would be prudent to take a more conservative approach to IFQ programs in these fisheries than that embodied in the current plan. They believe that the Sitka Block proposal represents such an approach. In being less "wide-open" they think that it will lower administrative costs and reduce the perceived risk of negative social and economic impacts. They point to more conservative initial approaches to IFQs elsewhere including the sablefish and halibut IFQ programs in British Columbia.¹⁰

1.3 Alternatives Considered

Discussions with the originators of the Sitka Block proposed amendment indicated that they wanted to review a number of alternative versions of the proposal for both the halibut and sablefish fisheries. In some versions, the catcher vessel category distinctions in the current plan are maintained, in other versions the catcher boat distinctions are altered. The alternatives also vary in terms of the number of blocks a person is allowed to accumulate in an area, and the number of blocks which can be fished from a single vessel.

These status quo and the Sitka Block alternatives for halibut and sablefish are outlined in subsections 1.3.1 through 1.3.11 below. The following paragraphs briefly explain the calculation of the maximum block sizes by area and other features of the Sitka Block proposal which are common to all of the alternatives.

⁹See Linda Behnken's letter and the outline of the Sitka Block proposal in Appendix A.

¹⁰ The halibut and sablefish fisheries in British Columbia were already regulated by limited entry licenses when the experimental individual vessel quota (IVQ) programs were implemented. The IVQ allocations were tied to a vessel license and the amounts varied by vessel license. The IVQ allocations were "stackable" in the sablefish fishery but not in the halibut fishery. Bruce Turris, halibut and sablefish coordinator for the Department of Fisheries and Oceans, has indicated that these programs are now being made permanent and IVQ allocations are being made more divisible in both fisheries (personal communication with authors). Turris was sympathetic to a conservative incremental approach to an IFQ program to make sure that the industry supported it and to make sure that those administering and enforcing the program could adequately handle their tasks.

The Sitka Block proposed amendment states that the maximum block size for an area should be 1/2 of the ownership cap for the area. As noted above, persons with QS for an area which exceed this maximum block size would have their holdings split into more than one block. Under the IFQ plans, as described in the proposed rule, QS holdings in some areas are restricted by more than one ownership constraint.

Most of the ownership caps in the IFQ plan are caps that apply to QS ownership over multiple areas. Once all QS have been issued, the ownership caps on QS should vary only slightly from year to year.

Conversations with the originators of the Sitka Block proposal indicated that they wanted the maximum block size for an area to be 1/2 of the most restrictive ownership cap constraint affecting that area. These block sizes would be calculated in the year that the program begins.

The following tables provide current estimates of maximum block sizes by area under the proposal. These estimates are based upon current estimates of total qualifying pounds and total QS.

The maximum block sizes by area have also been translated into IFQs assuming 1991 TACs. Again, 1991 TACs were chosen for illustrative purposes, to be consistent with previous Council estimates in the Supplemental Analysis.¹¹ If different TACs prevail in the year the IFQ program is implemented, then the maximum block sizes will translate into different amounts of IFQ.

The ownership caps for persons or individuals under the halibut IFQ plan are stated as follows:

No person or individual may own, hold, or otherwise control, individually or collectively more than:

- a. 0.5% of the total QS from the combined IPHC areas 2C, 3A, and 3B,
- b. 0.5% of the total QS from the combined IPHC areas 4A, 4B, 4C, 4D, and 4E, or
- c. 1.0% of the total QS from IPHC Area 2C.

These ownership caps can be translated into estimated QS using current estimates of qualifying pounds.

¹¹The full title of the report is Supplemental Analysis Of The Individual Fishing Quota Management Alternative For Fixed Gear Sablefish And Halibut Fisheries - Gulf Of Alaska and Bering Sea / Aleutian Islands March 1992. For brevity it will be referred to as The Supplemental Analysis herein.

**TABLE 1.3-1. Halibut Ownership Cap Constraints
(1991 TACs)**

Management Areas	QS CONSTRAINT (Quota Shares)
2C	575,753.15
2C+3A+3B	1,415,833.10
4A+4B+4C+4D+4E	147,682.47

The Sitka Block proposed amendment would make the maximum block size for an area equal to 1/2 of the most restrictive constraint affecting that area. Each area is included in at least one QS ownership cap constraint. Area 2C is included in two quota share ownership cap constraints. Estimates of the QS constraints are based upon current estimates of total qualifying pounds.¹²

The following table takes one-half of the most binding QS constraint by area to estimate QS maximum block sizes by area. The amount of IFQ associated with that maximum block size will vary from year to year depending upon the TACs. Another column also shows what these maximum block sizes would be worth in IFQs using 1991 TACs. These are the maximum block sizes used to evaluate all of the Sitka Block alternatives for halibut.

**TABLE 1.3-2. Halibut Maximum Block Sizes By Area
(assuming 1991 TACs)**

Area	Most Restrictive Ownership Constraint (QS)	Maximum Block Size (QS)	Maximum Block Size (IFQs)
2C	575,753.15	287,876.58	37,000
3A	1,415,833.10	707,916.55	107,351
3B	1,415,833.10	707,916.55	124,146
4A	147,682.47	73,841.24	9,577
4B	147,682.47	73,814.24	15,194
4C	147,682.47	73,841.24	11,837
4D	147,682.47	73,841.24	10,404
4E	147,682.47	73,841.24	44,640

¹²These estimates are made from the data set used in The Supplemental Analysis which was constructed by NFMS from several different data sources.

The ownership caps for persons or individuals under the sablefish IFQ plan are stated as follows:

No person or individual may own, hold, or otherwise control, individually or collectively more than:

- a. 1.0% of the combined total QS for the Gulf of Alaska and Bering Sea/Aleutian Islands areas or
- b. 1.0% of the total QS for the area east of 140 degrees W.

These estimated QS ownership cap constraints for sablefish are shown in the following table. These estimates are also based upon current estimates of sablefish qualifying pounds.¹³

**TABLE 1.3-3. Sablefish Ownership Cap Constraints
(assuming 1991 TACs)**

Management Areas	QS CONSTRAINT (Quota Shares)
GOA + BSAI	2,829,535.04
E. of 140 ⁰ W.	599,444.19

The Sitka Block proposed amendment would make the maximum block size equal to one-half of the most restrictive ownership cap constraint for an area. Each area is involved in at least one quota share constraint. The Southeast Outside regulatory district that is east of 140 degrees west longitude has two quota share ownership constraints.

The following table takes one-half of the most restrictive QS constraint by area to estimate QS maximum block sizes by area. The amount of IFQ associated with that maximum block size will vary from year to year depending upon the TACs. Another column shows what these maximum block sizes would be worth in IFQs using 1991 TACs. These are the maximum block sizes used to evaluate all of the Sitka Block alternatives for sablefish.

¹³Again, these estimates are made from the data set used in The Supplemental Analysis which was constructed by NFMS from several different data sources.

**TABLE 1.3-4. Sablefish Maximum Block Sizes
(assuming 1991 TACs)**

Area	Most Restrictive Ownership Constraint (QS)	Maximum Block Size (QS)	Maximum Block Size (IFQs)
AL	2,829,535.04	1,414,767.52	267,377
BS	2,829,535.04	1,414,767.52	327,945
CG	2,829,535.04	1,414,767.52	261,427
SEO	599,444.19	299,722.10	51,842
WG	2,829,535.04	1,414,767.52	233,177
WY	2,829,535.04	1,414,767.52	249,778

In the analysis of the Sitka Block sablefish alternatives in Sections 3.8 through 3.11 below, 1991 TACs are used and maximum block sizes in an area have been determined as shown above.

The following sections briefly describe each alternative in more detail. Alternative 1 is the current plan which is the status quo with which all other alternatives are compared. It is briefly described in Section 1.3.1.

The Council could adopt a Sitka Block proposed alternative for halibut and/or for sablefish. The six Sitka Block alternatives for halibut are described in Sections 1.3.2 through 1.3.7. The alternatives vary with respect to the presence or absence of vessel categories among catcher vessels, the number of vessel categories, and the number of blocks in an area which can be held by a person. The freezer-longliner and catcher vessel distinction is maintained in all alternatives.

The four Sitka Block alternatives for sablefish are described in Section 1.3.8 through 1.3.11. Again, the alternatives vary with respect to the presence or absence of vessel categories among catcher vessels, the number of vessel categories, and the number of blocks in an area which can be held by a person. The freezer-longliner and catcher boat distinction is maintained in all alternatives.

1.3.1 Alternative 1: Status Quo: The Current IFQ Plan

Under the current IFQ plan, a person's IFQ in an area for a given year will depend upon the person's QS in the area, the total shares issued for the area, and the total allowable catch for the area (TAC).¹⁴ In mathematical terms, an individual's allocation of individual fishing quota in the area for a year will be determined as follows:

$$F_{ij} = [(Q_{ij} / Q_j) \times (T_j - CQ_j)] - O_{ij}$$

Where:

- F_{ij} = individual i's pounds of IFQ in area j.
- Q_{ij} = individual i's holdings of quota shares for area j.
- Q_j = Total quota shares issued in area j.
- T_j = The TAC for area j.
- CQ_j = Any Community Development Quota for area j.
- O_{ij} = Any overage for person i in area j in the previous year.

The current IFQ plan also calls for QS and IFQ to be vessel class specific. The vessel classes in the current halibut plan are defined as follows:

I. Halibut Catcher Vessel Categories

- a. Vessels less than or equal to 35 feet length overall.
- b. Vessels greater than 35 and less than or equal to 60 feet length overall.
- c. Vessels greater than 60 feet length overall.

II. Freezer Vessels

The vessel classes in the current sablefish IFQ plan are defined as follows:

I. Sablefish Catcher Vessel Categories

- a. Vessels less than or equal to 60 feet length overall
- b. Vessels greater than 60 feet length overall.

II. Freezer Vessels

Under the plan, QS allocated to a vessel class are not transferable to another vessel class. This constraint would be part of the bundle of use-privileges attached to a quota share upon initial issuance and would remain with that quota share thereafter. Catcher boat QS cannot be transferred

¹⁴Again, CDQ and CDQ compensation will likely mean that QS will not be exactly equal to qualifying pounds.

for use by another vessel class.¹⁵ For a more complete description of the current IFQ plan see the Final Rule.¹⁶

1.3.2 Alternative 2H: Catcher Boat/Freezer-Longliner Distinction Only, Three Block Maximum Consolidation Rule.

Alternative 2H is a Sitka Block alternative for the halibut fishery. The catcher boat size distinction in the current plan would be removed and QS could be freely transferred among all catcher boats. The freezer-longliner and catcher boat class distinctions in the current plan would be maintained. A person could hold a maximum of three blocks in an area and a maximum of five blocks could be fished from a given vessel.

1.3.3 Alternative 3H: Catcher Boats Divided Into Two Classes, Catcher Boat/Freezer Longliner Distinction Maintained, Three Block Maximum Consolidation Rule.

Alternative 3H is a Sitka Block alternative for the halibut fishery. The three catcher boat size categories within the current plan would be changed to two size classes, a "less than or equal to 60 foot" size class and a "greater than 60 foot" size class. Transfers of QS could not occur across these catcher vessel categories. The freezer-longliner and catcher vessel class distinctions in the current plan would be maintained. A person could hold a maximum of three blocks in an area and a maximum of five blocks could be fished from a given vessel.

1.3.4 Alternative 4H: Catcher Boat Size Classes Are Maintained, Catcher Boat/Freezer-Longliner Distinction Maintained, Three Block Maximum Consolidation Rule.

Alternative 4H is a Sitka Block alternative for the halibut fishery. The three catcher vessel size categories within the current plan would be maintained. Transfers of QS could not occur across these vessel classes. The freezer-longliner and catcher vessel class distinction in the current plan also would be maintained. A person could hold a maximum of three blocks in an area and a maximum of five blocks could be fished from a given vessel.

1.3.5 Alternative 5H: Catcher Boat/Freezer-Longliner Distinction Only, Two Block Maximum Consolidation Rule.

Alternative 5H is a Sitka Block alternative for the halibut fishery. The catcher vessel size distinction in the current plan would be removed and QS could be freely transferred among all catcher vessels. The freezer-longliner and catcher vessel class distinctions in the current plan would be maintained.

Alternative 5H differs from Alternative 2H only in the number of blocks a person can hold in an area. Under Alternative 5H, a person could hold a maximum of two blocks in an area and a maximum of four blocks could be fished from a given vessel.

¹⁵Under the Final Rule, catcher vessel IFQ can be used on a freezer vessel provided no frozen or otherwise processed fish are onboard during the fishing trip. However, the Council has voted to eliminate this rule for halibut and add further restrictions for sablefish.

¹⁶See 50 CFR Parts 672, 675, and 676. Federal Register, 58(215): 59375-59413. November 9, 1993.

1.3.6 Alternative 6H: Catcher Boats Divided Into Two Classes, Catcher Boat/Freezer-Longliner Distinction Maintained, Two Block Maximum Consolidation Rule.

Alternative 6H is a Sitka Block alternative for the halibut fishery. The three catcher vessel size categories within the current plan would be changed to two size classes, a "less than or equal to 60 foot" size class and a "greater than 60 foot" size class. Transfers of QS could not occur across these categories. The freezer-longliner and catcher vessel class distinction in the current plan also would be maintained. Alternative 6H differs from Alternative 3H only in the number of blocks which a person can hold in an area. Under Alternative 6H, a person could hold a maximum of two blocks in an area and a maximum of four blocks could be fished from a given vessel.

1.3.7 Alternative 7H: Catcher Boat Size Classes Are Maintained, Catcher Boat/Freezer-Longliner Distinction Maintained, Two Block Maximum Consolidation Rule.

Alternative 7H is a Sitka Block alternative for the halibut fishery. The three catcher vessel size categories within the current plan would be maintained. Transfers of QS could not occur across these vessel classes. The freezer-longliner and catcher vessel class distinction in the current plan also would be maintained. Alternative 7H differs from Alternative 4H only in the number of blocks a person can hold within an area. Under Alternative 7H, a person can hold a maximum of two blocks in an area and a maximum of four blocks could be fished from a given vessel.

1.3.8 Alternative 8S: Catcher Boat/Freezer-Longliner Distinction Only, Three Block Maximum Consolidation Rule.

Alternative 8S is a Sitka Block alternative for sablefish. The catcher vessel size distinction in the current plan would be removed and QS could be freely transferred among all catcher vessels. The freezer-longliner and catcher vessel class distinctions in the current plan would be maintained. A person could hold a maximum of three blocks in an area and a maximum of five blocks could be fished from a given vessel.

1.3.9 Alternative 9S: Catcher Boats Divided Into Two Classes, Catcher Boat/Freezer Longliner Distinction Maintained, Three Block Maximum Consolidation Rule.

Alternative 9S is a Sitka Block alternative for sablefish. The two catcher vessel size categories within the current plan (less than or equal to 60 feet and greater than 60 feet) would be maintained. Transfers of QS could not occur across these categories. The freezer-longliner and catcher vessel class distinction in the current plan also would be maintained. A person could hold a maximum of three blocks in an area and a maximum of five blocks could be fished from a given vessel.

1.3.10 Alternative 10S: Catcher Boat/Freezer-Longliner Distinction Only, Two Block Maximum Consolidation Rule.

Alternative 10S is a Sitka Block alternative for sablefish. The catcher vessel size distinctions in the current plan would be removed and QS could be freely transferred among all catcher vessels. The freezer-longliner and catcher vessel class distinction in the current plan would be maintained. Alternative 10S differs from Alternative 8S only in the number of blocks a person can hold in an area. Under Alternative 10S, a person can hold a maximum of two blocks in an area and a maximum of four blocks could be fished from a given vessel.

1.3.11 Alternative 11S: Catcher Boats Divided Into Two Classes, Catcher Boat/Freezer-Longliner Distinction Maintained, Two Block Maximum Consolidation Rule.

Alternative 11S is a Sitka Block alternative for sablefish. The two catcher vessel size categories within the current plan (less than or equal to 60 feet and greater than 60 feet) would be maintained. Transfers of QS could not occur across these categories. The freezer-longliner and catcher vessel class distinctions in the current plan also would be maintained. Alternative 11S differs from Alternative 9S only in the number of blocks a person can hold in an area. Under Alternative 11S, a person can hold a maximum of two blocks in an area and a maximum of four blocks could be fished from a given vessel.

1.3.12 Summary of Sitka Block Alternatives

The following tables provide a brief summary outline of the Sitka Block alternatives for halibut and sablefish.

**OUTLINE OF SITKA BLOCK ALTERNATIVES
HALIBUT**

Alternative	Number of Blocks	Vessel Categories	
	People/Vessels	Freezers	Catcher boats
2H	3/5	F	CB: (all sizes)
3H	3/5	F	CB: LE 60 ft GT 60 ft
4H	3/5	F	CB: LE 35 ft 36-60 ft GT 60 ft
5H	2/4	F	CB (all sizes)
6H	2/4	F	CB: LE 60 ft GT 60 ft
7H	2/4	F	CB: LE 35 ft 36-60 ft GT 60 ft

**OUTLINE OF SITKA BLOCK ALTERNATIVES
SABLEFISH**

Alternative	Number of Blocks	Vessel Categories	
	People/Vessels	Freezers	Catcher boats
8S	3/5	F	CB: (all sizes)
9S	3/5	F	CB: LE 60 ft GT 60 ft
10S	2/4	F	CB: (all sizes)
11S	2/4	F	CB LE 60 ft. GT 60 ft.

1.4 Estimation Of Halibut Blocks Under The Sitka Block Alternatives

The Sitka Block alternatives for halibut were outlined in Sections 1.3.2 through 1.3.7 above. All alternatives would place the initial allocation of QS into blocks. Persons whose QS were above the maximum block size for an area would receive multiple blocks.

Under the proposal, halibut blocks with QS that are worth less than 1,000 pounds of IFQ in the year the program begins could be consolidated as long as the resulting halibut block does not contain QS that would be worth more than 1,000 pounds of IFQ in the implementation year.

The QS contained in blocks greater than these minimal amounts would remain permanently tied to the block or QSL. Under all Sitka Block alternatives, the current Quota Share consolidation caps in the plan will be maintained. In addition, the Sitka Block alternatives would further restrict consolidation by limiting the number of blocks that a person could own in an area.

Maximum potential consolidation under each halibut Sitka Block alternative was estimated by area as follows:

1. Maximum block sizes for halibut are determined for each area. As explained in Sections 1.2 and 1.3, these maximum block sizes were set equal to one-half of the most restrictive ownership constraint for each area. The most restrictive ownership constraint would be calculated once all qualifying pounds are known.¹⁷ In that year, the maximum block size would be established for each area in QS, and thereafter might vary from year to year in terms of the IFQs it represents. In this report, translation of maximum block sizes into IFQs was based upon 1991 TACs.
2. The initial distributions of QS are determined by area. QS which are greater than the maximum block size are split into multiple blocks. These consist of a block(s) of maximum block size and a remainder block which is less than the maximum block size.
3. Halibut blocks of QS that are worth less than 1,000 pounds of halibut IFQ are then consolidated into blocks with QS that are worth no more than 1,000 pounds of halibut IFQ.¹⁸ The rule used to estimate the maximum consolidation of these blocks was simply to sum the IFQs associated with these blocks (in the implementation year) and divide by 1,000. The integer of this result represents a number of blocks with exactly 1,000 pounds. The remainder represents a single halibut block of less than 1,000 pounds. Each of these consolidated blocks is then treated as a "single" block in step 4.

¹⁷This assumes that total QS will be set equal to total qualifying pounds. Discussions with Council staff on possible CDQ compensation procedures suggests that compensation will be achieved through the redistribution of QS rather than the issuance of additional quota shares. Even if additional QS are issued (so that quota shares exceed the number of qualifying pounds), the total number of qualifying pounds would need to be known in order to precisely calculate the required compensation.

¹⁸Note that this rule may need to be written in terms of QS or in terms of IFQ value of the blocks in the implementation year. The consolidation of such blocks could take place over several years and the value of each block in terms of IFQ will vary each year. In this analysis, it was assumed that the consolidation rule would operate using the IFQ value of the blocks in the implementation year, even if the consolidation of such blocks occurs in later years.

The procedure produces an estimate of the maximum initial consolidation of these blocks. Again, the actual consolidation of such blocks would likely be less.

4. The remaining blocks in an area can then be further consolidated by the rules of the particular alternative. In some alternatives a person could hold three blocks in an area. In other alternatives, only two blocks could be held.

Using the three-block rule, maximum consolidation was calculated by simply dividing the number of blocks by three (one was added if there was a remainder), as long as the number of blocks below one-half the maximum block size was at least as great as half the number above. An alternative rule was used if the distribution of blocks by size did not meet this condition.¹⁹

Under the two-block rule, maximum potential consolidation was estimated simply by dividing the number of blocks by two.

Table 1.4-1 shows the results of these first three steps when vessel categories are ignored. The initial distribution of IFQs (based on QS distribution and 1991 TACs) by halibut area is shown in the "Current Status" columns. A few of the initial allocations exceed the maximum block size and need to be split into multiple blocks. The results of these splits are shown in the distribution in the "After Split" column. The final columns show the distribution of the remaining blocks after the maximum consolidation of blocks under 1,000 pounds of IFQ occurs.

As can be seen, there are relatively few initial allocations above the proposed maximum block sizes in each area as relatively few new blocks appear after the maximum block rule is applied. The 1,000 pound consolidation rule, as calculated herein, results in a significant reduction of small blocks in each area.²⁰

Table 1.4-2 and Table 1.4-3 provide some more detail on the estimated initial distribution of IFQ before the blocking rules are imposed. Table 1.4-2 shows the initial distribution of IFQ by pound class and area, assuming 1991 TACS. Similarly, Table 1.4-3 shows the initial cumulative distribution of IFQ by pound class and area.²¹

¹⁹The alternative rule was as follows:

IF $(N_{BLW}) < (N_{ABV}/2)$

THEN $MIN_BLKS = N_{BLW} + \{(N_{ABV} - 2*N_{BLW})/2\}$

Where:

N_{BLW} = the number of blocks below one-half the maximum block size.

N_{ABV} = the number of blocks above one-half the maximum block size.

²⁰Note that there is usually one remaining block under 1,000 pounds. This is the result of the method used to calculate maximum consolidation.

²¹Tables 1.4-1 through 1.4-3 have ignored any vessel class distinctions.

TABLE 1.4-1. Distribution of halibut IFQ blocks. The table shows blocks 1) as they currently stand, 2) after the split of blocks that exceed the maximum block size, and 3) after the blocks less than 1,000 lbs IFQ are consolidated (assuming 1991 TACs).

Halibut Mgmt Area	Block IFQs (1000s)	Current Status		After Split		After Consolidation	
		Number in Class	Percent	Number in Class	Percent	Number in Class	Percent
2C	< 0.5	767	32.3	767	32.3	.	.
	0.5-1.0	309	13.0	309	13.0	1	0.1
	1-5	802	33.8	803	33.9	1,173	70.4
	5-10	308	13.0	308	13.0	308	18.5
	10-20	155	6.5	155	6.5	155	9.3
	20-30	25	1.1	25	1.1	25	1.5
	30-40	*	*	5	0.2	5	0.3
	40-50	*	*	.	.	.	.
		2,371		2,372		1,667	
3A	< 0.5	1,018	31.5	1,018	31.4	1	0.0
	0.5-1.0	280	8.7	280	8.6	.	.
	1-5	880	27.2	882	27.2	1,260	54.2
	5-10	359	11.1	364	11.2	364	15.7
	10-20	320	9.9	324	10.0	324	13.9
	20-30	124	3.8	125	3.9	125	5.4
	30-40	84	2.6	84	2.6	84	3.6
	40-50	47	1.5	48	1.5	48	2.1
	50-60	32	1.0	32	1.0	32	1.4
	60-70	24	0.7	24	0.7	24	1.0
	70-80	20	0.6	20	0.6	20	0.9
	80-90	16	0.5	16	0.5	16	0.7
	90-100	7	0.2	7	0.2	7	0.3
	>= 100	19	0.6	19	0.6	19	0.8
		3,230		3,243		2,324	
3B	< 0.5	118	13.3	118	13.3	.	.
	0.5-1.0	97	10.9	97	10.9	1	0.1
	1-5	297	33.5	298	33.5	397	51.2
	5-10	132	14.9	132	14.8	132	17.0
	10-20	112	12.6	113	12.7	113	14.6
	20-30	60	6.8	61	6.9	61	7.9
	30-40	24	2.7	25	2.8	25	3.2
	40-50	18	2.0	18	2.0	18	2.3
	50-60	9	1.0	9	1.0	9	1.2
	60-70	*	*	*	*	*	*
	70-80	7	0.8	7	0.8	7	*
	80-90	*	*	*	*	*	0.1
	>= 100	7	0.8	7	0.8	7	0.9
		886		890		775	
4A	< 0.5	48	13.8	50	11.9	.	.
	0.5-1.0	46	13.3	51	12.1	1	0.3
	1-5	142	40.9	174	41.4	223	60.4
	5-10	58	16.7	145	34.5	145	39.3
	10-20	40	11.5	.	.	.	.
	20-30	9	2.6	.	.	.	.
	30-40	*	*	.	.	.	.
	40-50	*	*	.	.	.	.
		347		420		369	

(con't)

*TABLE 1.4-1 (con't).

Distribution of halibut IFQ blocks. The table shows blocks 1) as they currently stand, 2) after the split of blocks that exceed the maximum block size, and 3) after the blocks less than 1,000 lbs IFQ are consolidated (assuming 1991 TACs).

Halibut Mgmt Area	Block IFQs (1000s)	Current Status		After Split		After Consolidation	
		Number in Class	Percent	Number in Class	Percent	Number in Class	Percent
4B	< 0.5	12	7.7	12	5.6	1	0.5
	0.5-1.0	9	5.8	11	5.2	73	36.3
	1-5	52	33.5	63	29.6	45	22.4
	5-10	34	21.9	45	21.1	82	40.8
	10-20	25	16.1	82	38.5	.	.
	20-30	8	5.2	.	.	.	.
	30-40	4	2.6	.	.	.	.
	40-50	*	*	.	.	.	.
	50-60	5	3.2	.	.	.	.
	70-80	*	*	.	.	.	.
	80-90	*	*	.	.	.	.
		-----		-----		-----	
		155		213		201	
4C	< 0.5	8	9.8	8	7.7	1	1.0
	0.5-1.0	6	7.3	6	5.8	.	.
	1-5	34	41.5	39	37.5	45	46.4
	5-10	18	22.0	25	24.0	25	25.8
	10-20	8	9.8	26	25.0	26	26.8
	20-30	*	*	.	.	.	.
	30-40	*	*	.	.	.	.
	40-50	*	*	.	.	.	.
	50-60	*	*	.	.	.	.
		-----		-----		-----	
		82		104		97	
4D	< 0.5	7	10.6	7	7.2	.	.
	0.5-1.0	*	*	3	3.1	1	1.1
	1-5	21	31.8	29	29.9	32	35.2
	5-10	20	30.3	27	27.8	27	29.7
	10-20	9	13.6	31	32.0	31	34.1
	20-30	3	4.5	.	.	.	.
	30-40	*	*	.	.	.	.
	40-50	*	*	.	.	.	.
		-----		-----		-----	
		66		97		91	
4E	< 0.5	117	75.5	117	75.5	.	.
	0.5-1.0	11	7.1	11	7.1	1	2.0
	1-5	23	14.8	23	14.8	45	90.0
	5-10	4	2.6	4	2.6	4	8.0
		-----		-----		-----	
		155		155		50	
All Areas Total		=====		=====		=====	
		7,292		7,494		5,574	

Note: Asterisks have been used to preserve data confidentiality

TABLE 1.4-2. Estimated total IFQ pounds for halibut vessel owners by area and IFQ class (1991 TACs).

IFQ Class (1000s)	2C	3A	3B	4A	4B	4C	4D	4E
< 0.5	147,141	175,153	28,409	10,784	2,670	1,666	1,740	15,616
0.5-1.0	223,551	203,100	71,529	34,647	6,739	4,374	754	7,153
1-2	468,123	540,882	169,109	98,044	24,198	13,829	6,310	14,541
2-3	527,410	569,173	195,217	74,531	38,776	24,464	20,059	16,032
3-5	1,015,039	1,063,957	419,466	178,053	73,892	56,253	32,850	19,415
5-10	2,116,655	2,608,511	958,907	410,629	254,216	131,120	144,096	27,243
10-20	2,106,103	4,415,005	1,572,897	544,059	345,091	107,510	124,567	0
20-30	619,752	3,031,070	1,513,668	211,222	200,255	132,804	73,242	0
30-40	*	2,876,176	844,330	*	142,791	30,961	73,508	0
40-50	*	2,093,049	787,376	*	*	42,161	122,874	0
50-60	0	1,757,812	478,299	0	271,194	54,857	0	0
60-70	0	1,560,944	*	0	0	0	0	0
70-80	0	1,483,937	513,998	0	*	0	0	0
80-90	0	1,377,433	*	0	*	0	0	0
90-100	0	672,509	0	0	0	0	0	0
>= 100	0	2,171,288	907,524	0	0	0	0	0
Total	7,400,000	26,600,000	8,800,000	1,700,000	1,700,000	600,000	600,000	100,000

TABLE 1.4-3. Cumulative estimated amount of IFQ pounds for halibut vessel owners by area and IFQ class (1991 TACs).

IFQ Class (1000s)	2C	3A	3B	4A	4B	4C	4D	4E
< 0.5	147,141	175,153	28,409	10,784	2,670	1,666	1,740	15,616
0.5-1.0	370,693	378,253	99,937	45,431	9,408	6,041	2,494	22,770
1-2	838,816	919,135	269,046	143,475	33,607	19,869	8,804	37,311
2-3	1,366,225	1,488,308	464,263	218,006	72,382	44,333	28,863	53,342
3-5	2,381,264	2,552,265	883,729	396,058	146,275	100,586	61,713	72,757
5-10	4,497,919	5,160,777	1,842,636	806,688	400,491	231,706	205,809	100,000
10-20	6,604,022	9,575,782	3,415,533	1,350,747	745,582	339,216	330,376	.
20-30	7,223,775	12,606,852	4,929,201	1,561,969	945,837	472,021	403,619	.
30-40	*	15,483,028	5,773,531	1,657,532	1,088,628	502,982	477,126	.
40-50	7,400,000	17,576,077	6,560,907	1,700,000	1,267,729	545,143	600,000	.
50-60	.	19,333,889	7,039,207	.	1,538,923	600,000	.	.
60-70	.	20,894,833	*	.	.	.	.	.
70-80	.	22,378,770	7,803,198	.	1,615,430	.	.	.
80-90	.	23,756,203	*	.	1,700,000	.	.	.
90-100	.	24,428,712	*	.	.	.	.	.
>= 100	.	26,600,000	8,800,000	.	.	.	.	.

Note: Asterisks have been inserted to preserve data confidentiality.

1.5 Estimation Of Sablefish Blocks Under The Sitka Block Alternatives

The Sitka Block alternatives for sablefish were outlined briefly in Sections 1.3.8 to 1.3.11 above. All alternatives would place the initial allocation of QS into blocks. Persons whose QS were above the maximum block size for an area would receive multiple blocks.

Under the proposal, sablefish blocks with QS that are worth less than 3,000 pounds of IFQ in the implementation year could be consolidated as long as the resulting sablefish block does not contain QS that would be worth more than 3,000 pounds of IFQ.

The QS of blocks greater than these minimal amounts would remain permanently tied to the block. Under all Sitka Block sablefish alternatives, consolidation would be restricted by restricting the number of blocks that a person could own in an area.

Maximum potential consolidation under each Sitka Block sablefish alternative is estimated by area as follows:

1. Maximum block sizes for sablefish are determined for each area. As explained in Section 1.3, these maximum block sizes are set equal to one-half of the most restrictive ownership constraint for each area. The most restrictive ownership constraint would be calculated once all qualifying pounds are known.²² In that year, the maximum block size would be established for each area in QS, and thereafter might vary from year to year in terms of the IFQs it represents. In this report, translation of maximum block sizes into IFQs was based upon 1991 TACs.
2. The initial distribution of QS are determined by area. Those which are greater than the maximum block size are split into multiple blocks. These consist of a block(s) of maximum block size and a remainder block which is less than the maximum block size.
3. Sablefish blocks of QS that are worth less than 3,000 pounds of sablefish IFQ in the first year of the program are then consolidated into blocks with QS that are worth no more than 3,000 pounds of sablefish IFQ.²³ The rule used to estimate the maximum consolidation of these blocks was simply to sum the IFQs associated with these blocks and divide by 3,000. The integer of this result represents a number of blocks with exactly 3,000 pounds. The remainder represents a single sablefish block of less than 3,000 pounds. Each of these consolidated blocks is then treated as a "single" block in step 4.

²² Again, this assumes that total QS will be set equal to total qualifying pounds. Discussions with Council staff on possible CDQ compensation procedures suggest that compensation will be achieved through the redistribution of QS rather than the issuance of additional QS. Even if more QS are issued (so that QS are greater than qualifying pounds), the total number qualifying pounds would need to be known if the compensation is to be calculated precisely.

²³ Note that this rule may need to be written to refer to QS or the IFQ value of the blocks in the implementation year. The consolidation of such blocks could take place over several years and the value of each block in terms of IFQ will vary each year. In this analysis, it was assumed that the consolidation rule would operate using the IFQ value of the blocks in the implementation year, even if the consolidation of such blocks occurs in later years. Again, 1991 TACs were used to make the estimates.

This procedure produces an estimate of the maximum initial consolidation of these blocks. Again, the actual consolidation would likely be much less.

4. The remaining blocks in an area can then be further consolidated by the rules of the particular alternative. In some alternatives a person could hold three blocks in an area. In other alternatives, only two blocks could be held.

Using the three-block rule, maximum consolidation was simply calculated by dividing the number of blocks by three (one was added if there were a remainder), as long as the number of blocks below one-half the maximum block size was at least equal to half the number above.

Under these conditions it was assumed that any person could find three blocks where combined QS would not exceed the most restrictive ownership constraint. An alternative rule was used if the distribution of blocks by size did not meet this condition.²⁴ Under the two-block rule, maximum consolidation was estimated simply by dividing the number of blocks by two.

Table 1.5-1 shows the results of the first three steps. The initial distribution of IFQs (based on QS distribution and 1991 TACs) by sablefish area is shown in the "Current Status" columns. Some of the initial allocations exceed the maximum block size and need to be split into multiple blocks. The results of these splits are shown in the distribution in the "After Split" column. The final columns show the distribution of the remaining blocks after the maximum consolidation of blocks under 3,000 pounds of IFQ occurs.

As can be seen, there are relatively few initial allocations above the proposed maximum block sizes in each area as relatively few new blocks appear after the maximum block rule is applied. The 3,000 pound consolidation rule, as calculated herein, does result in a significant reduction of small blocks in each area.²⁵

Tables 1.5-2 and Table 1.5-3 provide some more detail on the estimated initial distribution of IFQ before the blocking rules are imposed. Table 1.5-2 shows the initial distribution of IFQ by pound class and area. Similarly, Table 1.5-3 shows the initial cumulative distribution of IFQ by pound class and area.²⁶

²⁴The alternative rule was as follows:

IF $(N_BLW) < (N_ABV/2)$

THEN $MIN_BLKS = N_BLW + \{(N_ABV - 2*N_BLW)/2\}$

Where:

N_BLW = The number of blocks below one-half the maximum block size.

N_ABV = The number of blocks above one-half the maximum block size.

²⁵Note that there is usually one remaining block under 3,000 pounds. This is the result of the method used to calculate maximum consolidation.

²⁶Tables 1.5-1 through 1.5-3 have ignored any vessel class distinctions.

TABLE 1.5-1.

Distribution of sablefish IFQ blocks. Table shows blocks 1) as they currently stand, 2) after the split of blocks that exceed the proposed maximum block size, and 3) after the blocks under 3,000 lbs. IFQ are consolidated (assuming 1991 TACs).

Sablefish Mgmt Area	Block IFQs (1000s)	Current Status		After Split		After Consolidation	
		Number in Class	Percent	Number in Class	Percent	Number in Class	Percent
Aleutians	< 1.0	14	10.2	14	9.9	.	.
	1-3	13	9.5	13	9.2	1	0.8
	3-5	14	10.2	14	9.9	23	18.5
	5-10	22	16.1	22	15.6	22	17.7
	10-20	23	16.8	23	16.3	23	18.5
	20-30	11	8.0	11	7.8	11	8.9
	30-40	6	4.4	6	4.3	6	4.8
	40-50	9	6.6	9	6.4	9	7.3
	50-60	4	2.9	4	2.8	4	3.2
	60-70	3	2.2	3	2.1	3	2.4
	70-80	*	*	*	*	*	*
	80-90	*	*	*	*	*	*
	90-100	*	*	*	*	*	*
	>= 100	13	9.5	17	12.1	17	13.7
		-----		-----		-----	
		137		141		124	
Bering Sea	< 1.0	37	24.0	37	24.0	.	.
	1-3	16	10.4	16	10.4	1	0.9
	3-5	9	5.8	9	5.8	23	19.8
	5-10	21	13.6	21	13.6	21	18.1
	10-20	27	17.5	27	17.5	27	23.3
	20-30	10	6.5	10	6.5	10	8.6
	30-40	11	7.1	11	7.1	11	9.5
	40-50	4	2.6	4	2.6	4	3.4
	50-60	6	3.9	6	3.9	6	5.2
	60-70	*	*	*	*	*	*
	70-80	*	*	*	*	*	*
	90-100	*	*	*	*	*	*
	>= 100	6	3.9	6	3.9	6	5.2
		-----		-----		-----	
		154		154		116	
Central Gulf	< 1.0	184	28.9	185	28.9	.	.
	1-3	88	13.8	88	13.7	1	0.2
	3-5	35	5.5	35	5.5	107	24.3
	5-10	45	7.1	45	7.0	45	10.2
	10-20	71	11.2	71	11.1	71	16.1
	20-30	37	5.8	37	5.8	37	8.4
	30-40	28	4.4	31	4.8	31	7.0
	40-50	19	3.0	19	3.0	19	4.3
	50-60	16	2.5	16	2.5	16	3.6
	60-70	16	2.5	17	2.7	17	3.9
	70-80	15	2.4	15	2.3	15	3.4
	80-90	9	1.4	9	1.4	9	2.0
	90-100	12	1.9	12	1.9	12	2.7
	>= 100	61	9.6	61	9.5	61	13.8
		-----		-----		-----	
		636		641		441	
Southeast outside	< 1.0	137	21.2	139	19.7	1	0.2
	1-3	77	11.9	82	11.6	.	.
	3-5	60	9.3	64	9.1	132	23.8
	5-10	101	15.6	110	15.6	110	19.8
	10-20	111	17.2	118	16.7	118	21.3

(con't)

TABLE 1.5-1 (con't).

Distribution of sablefish IFQ blocks. Table shows blocks 1) as they currently stand, 2) after the split of blocks that exceed the proposed maximum block size, and 3) after the blocks under 3,000 lbs. IFQ are consolidated (assuming 1991 TACs).

Sablefish Mgmt Area	Block IFQs (1000s)	Current Status		After Split		After Consolidation	
		Number in Class	Percent	Number in Class	Percent	Number in Class	Percent
Southeast outside (con't)	20-30	60	9.3	68	9.6	68	12.3
	30-40	29	4.5	37	5.2	37	6.7
	40-50	20	3.1	24	3.4	24	4.3
	50-60	17	2.6	65	9.2	65	11.7
	60-70	7	1.1	.	.	.	.
	70-80	6	0.9	.	.	.	.
	80-90	5	0.8	.	.	.	.
	90-100	4	0.6	.	.	.	.
	>= 100	13	2.0	.	.	.	.
		-----		-----		-----	
		647		707		555	
Western Gulf	< 1.0	30	16.2	30	16.0	1	0.6
	1-3	19	10.3	19	10.2	.	.
	3-5	12	6.5	12	6.4	27	17.5
	5-10	30	16.2	30	16.0	30	19.5
	10-20	39	21.1	39	20.9	39	25.3
	20-30	14	7.6	14	7.5	14	9.1
	30-40	14	7.6	14	7.5	14	9.1
	40-50	7	3.8	7	3.7	7	4.5
	60-70	3	1.6	3	1.6	3	1.9
	70-80	*	*	*	*	*	*
	90-100	*	*	*	*	*	*
	>= 100	12	6.5	14	7.5	14	9.1
		-----		-----		-----	
		185		187		154	
Southeast outside	< 1.0	94	23.1	94	23.0	.	.
	1-3	57	14.0	57	14.0	1	0.3
	3-5	34	8.4	34	8.3	79	26.1
	5-10	60	14.7	60	14.7	60	19.8
	10-20	51	12.5	52	12.7	52	17.2
	20-30	27	6.6	27	6.6	27	8.9
	30-40	21	5.2	21	5.1	21	6.9
	40-50	11	2.7	11	2.7	11	3.6
	50-60	10	2.5	10	2.5	10	3.3
	60-70	7	1.7	7	1.7	7	2.3
	70-80	6	1.5	6	1.5	6	2.0
	80-90	6	1.5	6	1.5	6	2.0
	90-100	5	1.2	5	1.2	5	1.7
	>= 100	18	4.4	18	4.4	18	5.9
		-----		-----		-----	
		407		408		303	
Unknown	< 1.0	25	100.0	.	.	.	.
		=====		=====		=====	
All Areas Total		2,191		2,238		1,693	

Notes: This table includes persons who were originally assigned IFQs of 0 due to their small amount of quota shares (blocks).

Asterisks have been used to preserve data confidentiality

TABLE 1.5-2. Estimated total IFQ pounds for sablefish vessel owners by area and IFQ class (1991 TACs).

IFQ Class (1000s)	Aleutian Islands	Bering Sea	Western Gulf	Central Gulf	West Yakutat	Southeast Outside
< 0.5	1,455	3,704	3,020	21,010	11,266	15,388
0.5-1.0	3,748	10,097	7,870	33,444	19,885	25,573
1-2	8,774	15,609	16,887	67,880	47,377	63,074
2-3	14,771	14,727	17,328	94,776	59,282	87,964
3-5	55,269	32,099	46,649	132,276	134,525	232,806
5-10	158,048	166,337	220,482	326,171	453,883	717,112
10-20	320,725	391,625	591,097	1,038,852	747,007	1,620,161
20-30	282,828	248,106	359,570	925,601	653,377	1,454,948
30-40	203,308	366,030	481,485	984,288	750,005	998,948
40-50	400,929	176,148	316,801	834,838	470,087	908,383
50-60	211,487	336,885	0	878,004	533,293	925,249
60-70	*	*	*	1,023,772	458,226	453,045
70-80	*	*	*	1,113,213	456,793	460,254
80-90	*	0	0	766,297	503,244	418,918
90-100	*	*	*	1,147,759	476,392	374,385
>= 100	2,994,266	1,150,382	2,495,453	9,262,627	2,706,565	1,612,224
Total	5,291,062	3,417,152	5,158,654	18,650,806	8,481,207	10,368,432

TABLE 1.5-3. Cumulative estimated amount of IFQ pounds for sablefish vessel owners by area and IFQ class (1991 TACs).

IFQ Class (1000s)	Aleutian Islands	Bering Sea	Western Gulf	Central Gulf	West Yakutat	Southeast Outside
< 0.5	1,455	3,704	3,020	21,010	11,266	15,388
0.5-1.0	5,203	13,801	10,891	54,454	31,151	40,962
1-2	13,977	29,409	27,778	122,333	78,528	104,035
2-3	28,748	44,136	45,106	217,109	137,810	191,999
3-5	84,017	76,235	91,755	349,385	272,334	424,804
5-10	242,065	242,572	312,238	675,556	726,217	1,141,917
10-20	562,790	634,197	903,335	1,714,407	1,473,224	2,762,077
20-30	845,618	882,303	1,262,905	2,640,009	2,126,601	4,217,025
30-40	1,048,927	1,248,333	1,744,390	3,624,296	2,876,606	5,215,973
40-50	1,449,855	1,424,480	2,061,191	4,459,134	3,346,693	6,124,357
50-60	1,661,342	1,761,365	2,061,191	5,337,138	3,879,986	7,049,605
60-70	*	*	*	6,360,910	4,338,212	7,502,651
70-80	*	*	*	7,474,123	4,795,005	7,962,905
80-90	*	*	*	8,240,420	5,298,249	8,381,823
90-100	*	*	*	9,388,179	5,774,641	8,756,208
>= 100	5,291,062	3,417,152	5,158,654	18,650,806	8,481,207	10,368,432

Note: Asterisks have been inserted to preserve data confidentiality

2.0 NEPA REQUIREMENTS: ENVIRONMENTAL IMPACTS OF THE ALTERNATIVES

An environmental assessment (EA) is required by the National Environmental Policy Act of 1969 (NEPA) to determine whether the action considered will result in significant impact on the human environment. The environmental analysis in the EA provides the basis for this determination and must analyze the intensity or severity of the impact of an action and the significance of an action with respect to society as a whole, the affected region and interests, and the locality. If the action is determined not to be significant based on an analysis of relevant considerations, the EA and resulting finding of no significant impact (FONSI) would be the final environmental documents required by NEPA. An environmental impact statement (EIS) must be prepared if the proposed action may cause a significant impact on the quality of the human environment.

An EA must include a brief discussion of the need for the proposal, the alternatives considered, the environmental impacts of the proposed action and the alternatives, and a list of document preparers. The purpose and alternatives were discussed in Sections 1.2 through 1.4, and the list of preparers is in Chapter 8. This section contains the discussion of the environmental impacts of the alternatives including impacts on threatened and endangered species and marine mammals.

2.1 Environmental Impacts of the Alternatives

Alternatives 2H through 7H and 8S through 11S would not alter the initial distribution of QS relative to the current IFQ programs (Alternative 1). These alternatives could however impact the future distribution of QS, as they add new constraints on QS ownership and transferability.

Chapter 3 of this report indicates that maximum potential consolidation in the sablefish and halibut fisheries is expected to decrease under these alternatives relative to the current plan. If actual consolidation is related to maximum potential consolidation, then it is likely that there will be more fishing operations remaining in these fisheries under the Sitka Block alternatives than under the status quo.

Nevertheless, all Sitka Block alternatives maintain the essential elements of an IFQ program, and as such should reduce or eliminate many of the problems associated with the "race for the fish." Thus the environmental impacts of the Sitka Block alternatives are not expected to be substantially different than the current IFQ programs which have been approved by the Secretary. Sections 2.2.19 through 2.2.27 of the Supplemental Analysis describe potential conservation and environmental impacts of the status quo.

2.2 Impacts on Threatened or Endangered Species

The following species, currently listed under the ESA, are present in the BSAI and GOA management areas.

Endangered

Northern right whale
Gray whale
Sei whale
Blue whale
Fin whale
Humpback whale
Sperm whale
Snake River sockeye salmon
Short-tailed albatross

Balaena glacialis
Eschrichtius robustus
Balaenoptera borealis
Balaenoptera musculus
Balaenoptera physalus
Megaptera novaeangliae
Physeter macrocephalus
Oncorhynchus nerka
Diomedea albatrus

Threatened

Steller sea lion
Snake R. spring/summer chinook salmon
Snake R. fall chinook salmon
Spectacled eider

Eumetopias jubatus
Oncorhynchus tshawytscha
Oncorhynchus tshawytscha
Somateria fischeri

To date, critical habitat has only been designated for the Steller sea lion.

Other sensitive seabird/marine bird species are listed below and include Category 1 and Category 2 species. Category 1 species are eligible for listing and await only the processing of higher priority species. Category 2 species are currently under review by the Fish and Wildlife Service for possible listing. Steller's eider is a category 1 species; all others are category 2 species.

Steller's eider
Marbled murrelet
Red-legged kittiwake
Kittlitz's murrelet

Polysticta stelleri
Brachyramphus marmoratus
Rissa brevirostris
Brachyramphus brevirostris

Status of Section 7 Consultations for above listed species:

Cetaceans: Formal consultation on the effects of the GOA groundfish fishery on listed cetaceans was concluded on April 19, 1991. The biological opinion issued for that consultation considered all aspects of the fishery and concluded that the fishery was unlikely to adversely affect listed cetaceans. The April 19, 1991, biological opinion on the effects of the BSAI groundfish fishery on listed species did not specifically evaluate effects to listed cetaceans in any detail. Instead it incorporated by reference, an earlier biological opinion on the effects of the BSAI groundfish fishery on cetaceans, issued December 14, 1979, and the biological opinion issued July 5, 1989, on the marine mammal exemption program. The April 19, 1991, BSAI opinion reiterated the conclusion of these earlier opinions that the BSAI groundfish fishery was unlikely to jeopardize listed cetaceans. Unless there is some change in the GOA or BSAI fishery or information on cetaceans that would indicate an

effect or relationship exists that we have not previously considered, it is not necessary to reinitiate consultation for these species.

Salmon: Effects of the GOA and BSAI groundfish fisheries on listed salmon were considered by informal consultations with the NMFS Northwest Region for fishing years 1992 and 1993 (February 20, 1992, April 21, 1993, respectively). In addition to the environmental assessment documents on the fisheries, the Alaska Region wrote a biological assessment (March 17, 1993) and the decisional document that accompanied the April 21, 1993, memorandum concluding that salmon species listed under the ESA were not likely to be adversely affected by the 1993 TACs, or by a change of the non-rope pollock fishing season in the BSAI. Subsequent informal Section 7 consultation occurred for BSAI Amendment 28 (June 7, 1993), and for GOA Amendment 31 (September 22, 1993).

Consultation for fishing year 1994 and for future years needs to be addressed. The Northwest Region stated their intention to rely on multiple-year consultations when the effects of an action on listed salmon can be evaluated adequately over the long term. We have also been advocating this approach. Tamra Faris and Jessica Gharrett are writing a biological assessment containing a description of anticipated fishing activities conducted under the FMPs, including annual specification amounts, in multiple-year terms and the current information on potential takings by the fishery of the listed salmon. Peter Dygert, NW Region, has been in contact with us regarding the information assessment and its packaging. When the impact analysis is complete, we should again confer with the NW Region to agree on a time frame for the consultation and to determine whether a formal or informal consultation is required. At a minimum, the process will be completed before calendar year 1993 ends.

Steller sea lions: Formal consultation on the effects of the BSAI and GOA groundfish fisheries on Steller sea lions was concluded on April 19, 1991. The biological opinions issued for these consultations considered all aspects of the fisheries and concluded that the BSAI and GOA fisheries were unlikely to jeopardize the continued existence and recovery of the Steller sea lion population. Subsequently, Section 7 consultation has been reinitiated for every change to the FMP or fishery that could affect Steller sea lions. Numerous informal consultations have been conducted; formal consultation was reinitiated for FM actions that appeared likely to result in adverse effects. Specifically, formal consultation was conducted and biological opinions issued for: (1) GOA 1991 pollock TAC, June 5, 1991; (2) GOA 1991 pollock fourth quarter allocation, September 20, 1991; (3) 1992 GOA TAC specifications, December 23, 1991; (4) 1992 BSAI TAC specifications, January 21, 1992; and (5) Amendment 18 to the BSAI FMP (inshore/offshore), March 4, 1992. PRMD will continue to track FM actions and will consult, formally and informally, as needed. The next anticipated consultation will consider effects of the 1994 TAC specifications, following the December 1993 meeting of the North Pacific Fishery Management Council.

Seabirds: Formal consultation was concluded on the effects of the NMFS Interim Incidental Take Exemption Program on the short-tailed albatross and other species listed under the ESA and under the jurisdiction of the USDI Fish and Wildlife Service (FWS) on July 3, 1989. That consultation concluded that BSAI and GOA groundfish fisheries would adversely affect the short-tailed albatross and would result in the incidental take of up to two birds per year, but would not jeopardize the continued existence of that species. A technical memorandum dated July 21, 1989, from the FWS to NMFS documented actions intended to reduce incidental take of the marbled murrelet, a species not listed, but a category 2 candidate. Subsequently, Section 7 consultation has been reinitiated for major changes to the FMP or fishery that might affect the short-tailed albatross; these have been informal consultations, and have concluded that no additional adverse impacts beyond those in the aforementioned formal consultation would occur. These subsequent informal consultations include:

(1) 1992 BSAI and GOA TAC specifications, January 17, 1992; (2) 1993 BSAI and GOA TAC specifications, February 1, 1993, and clarified February 12, 1993; (3) delay of the second quarter pollock fishing season in the GOA, December 22, 1992; (4) careful release of halibut in hook-and-line fisheries, March 12, 1993; (5) delay of the second pollock fishing seasons in the BSAI and GOA, March 12, 1993; (6) BSAI Amendment 28, April 14, 1993; (7) GOA Amendment 31, July 21, 1993; and (8) 1994 BSAI and GOA TAC specifications, February 14, 1994.

None of the alternatives considered under this action will affect any of the above listed or candidate species.

2.3 Impacts On Marine Mammals

The Supplemental Analysis notes that under the IFQ program, which is Alternative 1 in this analysis, "the patterns of fishing in this fishery would change from a very brief opening with highly concentrated effort to an extended fishery over both time and space with effort being less concentrated but occurring over a longer time period and possibly over greater areas. Adverse interactions between fisheries and marine mammals have often been thought to be directly related to the concentration of fisheries in time and space. To the extent that is true for the fixed gear halibut and sablefish fisheries, the IFQ program, which will disperse the fishery in time and space, will decrease such effects."²⁷ This suggests that it may be less likely that marine mammals and longline gear will be at the same place at the same time if the fishery can be spread out in time and space.

There is, however, a possibility that interactions with marine mammals, specifically killer whales, may increase as fishing effort is spread out over time and space. Dalheim (1988) has documented interactions between longline fishermen and killer whales primarily in Prince William Sound and the Aleutian Islands. The killer whales are opportunistic feeders and learn to recognize the presence of longline gear in the area (by vessels and buoys) and respond to the sound of gear retrieval. As the longline gear is being retrieved and the sablefish are in the upper water column and on the water surface, killer whales may consume fish off the hooks. This results in less harvest to the vessel per unit of gear deployed. The "adverse impacts" occur if fishermen injure killer whales in their attempts to discourage them from feeding on the sablefish.

Some have suggested that confining longline gear to a narrow window of time may limit the amount of gear that is subject to killer whale predation because the whales can only be in one place at a time and there are not enough of them to be present at all gear retrievals.²⁸ If so, spreading longline gear retrieval out over time, as is the objective of the IFQ program, may provide a larger window of opportunity for killer whales to prey on the gear as it is being retrieved. However, if this occurs, fishermen will have increased time under an IFQ system to wait until killer whales move away from the area where their gear is set, to deploy dummy gear or to use other methods to distract or dissuade the killer whales.

Marine mammal interactions in the longline fisheries for halibut and sablefish are currently monitored through the Marine Mammal Exemption Program (MMEP). Under this program, all longline fisheries in the GOA and BSAI are categorized as to their expected impact on marine mammals. If

²⁷ Supplemental Analysis, page 7-9.

²⁸ Personal Communication with Tamra L. Faris, a fishery biologist with the Protected Resources Management Division, NMFS Alaska Region in Juneau, Alaska.

increased interactions between fishermen and marine mammals occur in the future as a result of the IFQ program or amendments to it, changes in the classification and monitoring of these longline fisheries may be needed.

The block proposals identified in this analysis are expected to result in less consolidation of IFQ and, therefore, more individual fishing operations. While it is possible that an IFQ program may provide increased opportunities for killer whales to feed off sablefish while longline gear is being retrieved, the extent to which killer whale interactions will change is unknown. The change in fishing effort as a result of the block proposals is not expected to result in a significant increase in interactions with marine mammals over and above that which will be experienced under the current IFQ program (status quo).

2.4 Conclusions or Findings of No Significant Impact

Under NEPA an action has a significant impact if it does the following:

- a. jeopardizes the productive capability of the stocks;
- b. damages ocean and coastal habitats
- c. adversely impacts public health or safety
- d. adversely affects endangered species or marine mammals; and/or
- e. has cumulative effects on stocks.

The Sitka Block alternatives are unlikely to jeopardize the productive capability of the stocks or have cumulative effects on the stocks. Sections 2.2.19 through 2.2.27 of the Supplemental Analysis describe the conservation and environmental impacts of the current IFQ program. The Sitka Block program may increase the number of fishing operations remaining in the fishery, but will still reduce the "race for the fish" and reduce stock losses associated with fishing mortality due to the lost gear and discarded bycatch.

The increase in the number of fishing operations may increase enforcement problems associated with underreporting, highgrading, and misreporting the area of catch relative to the current IFQ program. Nevertheless, it is currently expected that the plan administrator and fishery managers will be able to contain such problems, should they occur, so that the stocks are not jeopardized. A Sitka Block alternative should not be significantly different than the current program with respect to the need to contain such problems.

A Sitka Block amendment should not impact threatened or endangered species relative to the status quo. The Sitka Block alternatives are expected to have no impacts on marine mammals relative to the current IFQ program. The Sitka Block proposed amendment is not likely to impose significant damages on ocean and coastal habitats.

A Sitka Block amendment should not adversely affect public health or safety. Section 2.2.1 in the Supplemental Analysis indicates that the current IFQ program is expected to increase the safety of fishermen "by reducing substantially the incentive fishermen have to disregard factors that increase the risk of accidents."²⁹ An IFQ program does this by reducing "the race for the fish" and thereby reducing the opportunity cost of safety. The Sitka Block alternatives would provide similar incentives with respect to safety.

In summary, the Sitka Block alternatives are not expected to have significant impacts under NEPA.

²⁹Supplemental Analysis, page 2-3.

3.0 REGULATORY IMPACT REVIEW: SOCIAL AND ECONOMIC IMPACTS OF THE ALTERNATIVES

This chapter provides information about the economic and socioeconomic impacts of the alternatives including identification of the individuals or groups that may be affected by the action, the nature of the impacts, quantification of the economic impacts if possible, and discussion of the tradeoffs between qualitative and quantitative benefits and costs.

The requirements for all regulatory actions specified in E.O. 12866 are summarized in the following statement from the order:

In deciding whether and how to regulate, agencies should assess all costs and benefits of available regulatory alternatives, including the alternative of not regulating. Costs and benefits shall be understood to include both quantifiable measures (to the fullest extent that these can be usefully estimated) and qualitative measures of costs and benefits that are difficult to quantify, but nevertheless essential to consider. Further, in choosing among regulatory approaches, agencies should select those approaches that maximize net benefits (including potential economic, environment, public health and safety, and other advantages; distributive impacts; and equity), unless a statute requires another regulatory approach.

This chapter also addresses the requirements of both E.O. 12866 and the Regulatory Flexibility Act to provide adequate information to determine whether an action is "significant" under E.O. 12866 or will result in "significant" impacts on small entities under the RFA. E.O. 12866 defines a "significant regulatory action" as likely to result in (1) an annual effect on the economy of \$100 million or more; (2) an adverse effect in a material way on the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local or tribal governments or communities; or (3) a novel legal or policy issue. Requirements of the RFA are addressed in Chapter 4.

This section provides an RIR for the Sitka Block proposed amendment alternatives. As previously noted, a main objective of the Sitka Block proposed amendment is to reduce the potential for consolidation of QS relative to the current plan. Proponents think that preserving QS in a wide variety of block sizes will also ensure that the current diversity of operations within the fleet will be maintained.

While small amounts of QS will be allocated under the current IFQ program, and nothing precludes any fisherman from buying a small amount of QS if small amounts are profitable, some fear that consolidation will result in a small number of operations with relatively large holdings.

The Sitka Block proposal seeks to guarantee that a large number of smaller blocks will continue to exist. Proponents believe that the existence of a large number of small blocks will ensure that some QS will continue to be available to support a part-time fleet and an entry level fishery.

Aspects pertinent to all of the Sitka Block alternatives have been explored above. The main focus of this section is to examine to what extent the Sitka Block alternatives alter the potential for maximum consolidation relative to the current plan.

A more difficult question is how actual consolidation would be altered by the different alternatives. These authors suspect that actual consolidation will be less than the maximum possible consolidation

(minimum number of quota share holders) under all alternatives, including the current plan. Nevertheless, actual consolidation is difficult to forecast.

The rough estimates of the maximum potential consolidation contained herein may provide an index of the relative ranking of alternatives with respect to consolidation. The Status Quo alternative used in this analysis is the current plan for sablefish and halibut. The status quo is covered in Section 3.1. The Sitka Block proposed alternatives for the halibut fishery are covered in Sections 3.2 through 3.7. The Sitka Block proposed alternatives for the sablefish fishery are covered in Sections 3.8 through 3.11.

3.1 Alternative 1: The Status Quo: The Current IFQ Programs

The Sitka Block proposal would amend the current IFQ program for sablefish and halibut. Thus for the purpose of this analysis, this program is the status quo.

The Supplemental Analysis indicates that the ownership cap³⁰ restrictions, to the extent that they are enforceable, will prevent the number of QS holders and the number of vessels from falling below the following levels:

Halibut:

1. Area 2C-3B halibut (together): 200 QS owners.
2. Area 4A-4E halibut (together): 200 QS owners.
3. Area 2C halibut: 100 QS owners.
4. All areas (together): 200 QS owners.

Sablefish:

1. EEZ wide sablefish: 100 QS owners and 100 boats.
2. Gulf of Alaska sablefish East of 140° W : 100 QS owners and 100 boats.

This is the maximum possible consolidation that could occur under the IFQ program (ignoring enforcement problems). The Supplemental Analysis indicated that it was not clear how far consolidation of QS actually would go under the IFQ program. In part, it will depend upon whether or not operations which specialize in the halibut or sablefish fishery will tend to be more profitable with respect to using IFQs than will operations which are more diversified.³¹

The Supplemental Analysis used harvesting cost models to help predict the net economic benefits which would result from the halibut IFQ program. The harvesting cost model for halibut was used with vessels that had landings of at least 500 pounds in areas 2C, 3A, 3B, or 4A. Without an IFQ program there were approximately 3,796 vessels in this category in 1990. Among other things, the

³⁰Information on the ownership caps is provided in Section 1.3 above.

³¹See the Supplemental Analysis, page 2-45.

harvesting cost model was used to estimate the number of vessels which would remain in the IFQ fishery under different assumptions.

Assuming that there would be consolidations of QS within a vessel category but not across vessel categories, and that each remaining vessel would be involved in the fishery for 200 days a year, the halibut harvesting cost model predicted that the number of vessels would decline from approximately 3,796 vessels to the 147 to 192 vessel range. Using the same assumptions, but allowing consolidation across vessel classes produced an estimate of 72 to 94 vessels. All of these numbers were below the maximum ownership caps set by the Council.

The halibut harvesting cost model predicted higher remaining fleet levels if each vessel would be involved in the halibut fishery only 50 days a year. Here the estimate ranged from 588 to 768 vessels. Under these assumptions, the ownership caps would not be binding.

The Supplemental Analysis suggested that the number of vessels in the sablefish fishery could fall below 100 in the absence of ownership caps.³² If so, the ownership caps would be binding and 100 vessels would be the minimum that would occur after maximum consolidation. However, it is unclear that actual consolidation would go that far.

This analysis will concentrate on rough estimates of the maximum potential consolidation under each alternative. For purposes of this analysis, the levels implied by the ownership caps above will be used as the estimates for the status quo alternative.

3.2 Alternative 2H: Catcher Boat / Freezer-Longliner Distinction Only, Three Block Max Consolidation Rule

The first alternative for halibut is the original Sitka Block proposed amendment (see Appendix A). Here size categories would be eliminated for catcher vessels, and blocks of QS could be traded freely among all catcher vessels. Quota share blocks could not be traded between catcher vessels and freezer-longliners. The ownership cap restrictions in the current IFQ plan would remain unchanged.

This alternative uses maximum block sizes as described in Section 1.3. In the examples herein, maximum block sizes have been translated into IFQs given 1991 TACs. Blocks with QS worth less than 1,000 pounds of IFQ can be combined as long as the QS in the combination are not worth more than 1,000 pounds of IFQ in the implementation year.

While trading among all catcher vessels would be allowed under the proposal, a new consolidation constraint is imposed by the alternative. A person is restricted to holding a maximum of three blocks in an area on an ongoing basis, and only five blocks can be fished from a vessel.

Table 3.2 provides summary details on numbers of blocks by area. The table also provides estimates by area of maximum potential consolidation under Alternative 2H. Note that to assure confidentiality, data categories have been combined in some areas and certain data have been deleted.

Table 3.2 provides the maximum block sizes by area in terms of IFQ. As blocks contain QS their value in terms of IFQ will vary each year as TACs vary. Here, the block sizes were calculated using

³²See Table 2.2 of the Supplemental Analysis.

1991 TACs. As can be seen, these maximum block sizes for halibut vary widely from 9,577 pounds in Area 4A to 124,146 pounds in Area 3B.³³

The estimated distribution of blocks above and below the maximum block size in each area are also provided in two columns. These blocks represent those that are remaining after blocks under 1,000 pounds have been consolidated. In most areas, the number of blocks below one-half of the maximum block size exceeds the number of blocks above one-half the maximum block size. Areas 4B and 4D are exceptions.

The estimated minimum numbers of block holders that would result if the maximum potential consolidation occurred are shown in the last column of Table 3.2. These estimates are shown by area. If maximum potential consolidation occurred, these estimates suggest that Area 3A would have the largest remaining number of block holders at 776.³⁴

The minimum number of block holders across all areas cannot be calculated by this method. Nevertheless, an examination of the ownership restrictions suggests that the global minimum across all areas might approach the highest remaining number of block holders in any one area. Again, this would be 776. The estimates, when compared with the status quo estimates, suggest that Alternative 2H would reduce the potential for consolidation relative to the current plan.

The estimates in Table 3.2 represent the remaining number of block holders should maximum consolidation occur. Under Alternative 2H, up to five blocks could be fished from a vessel. If five blocks were fished from every vessel, the number of vessels would be lower than the number of block holders. The minimum number of vessels across all areas, if all boats utilized five quota share licenses, would be approximately 3/5 (60%) of the number of block holders should maximum consolidation occur (465).

Again, the maximum potential consolidation represents an extreme estimate, and the authors suspect that the actual number of remaining block holders would be greater than these estimates should the amendment be adopted. However, if estimates of maximum potential consolidation provide a relative ranking of alternatives with respect to consolidation, then consolidation of quota share holdings under Alternative 2H would likely be less than consolidation under the status quo.

³³Recall that the maximum block sizes may be different (than those shown here) in the implementation year, as the ownership cap restrictions will be applied to different TACs.

³⁴Note that this analysis does not consider CDQ allocations or CDQ compensation.

TABLE 3.2. Sitka Block Alternative 2H: HALIBUT
Estimated maximum consolidation of blocks by catcher
and freezer boat class

Area	Vessel Type	Maximum Block Size (lbs. IFQ)	Blocks Above One-Half Maximum Block Size	Blocks Below One-Half Maximum Block Size	Total Blocks	Estimated Minimum Block Holders
2C	Catcher \ Freezer	37,000	40	1,627	1,667	557
3A	Catcher Freezer	107,351 107,351	107 *	2,210 *	2,317 7 ----- 2,324	773 3 ----- 776
3B	Catcher Freezer	124,146 124,146	15 *	753 *	768 7 ----- 775	256 3 ----- 259
4A	Catcher Freezer	9,577 9,577	146 *	218 *	364 5 ----- 369	122 2 ----- 124
4B	Catcher Freezer	15,194 15,194	100 *	95 *	195 6 ----- 201	65 2 ----- 67
4C	Catcher \ Freezer	11,837	47	50	97	33
4D	Catcher Freezer	10,404 10,404	50 *	33 *	83 9 ----- 92	28 4 ----- 32
4E	Catcher	44,640	0	50	50	17
All Areas Total					===== 5,575	===== 1,865

Note: Asterisks have been inserted and/or vessel categories have been consolidated to preserve confidential data.

3.3 Alternative 3H: Two Catcher Boat Categories, Catcher Boat/Freezer-Longliner Distinction Maintained, Three Block Max Consolidation Rule.

Alternative 3H for halibut would provide for two catcher vessel classes as well as a freezer-longliner class. The two catcher vessel classes are vessels of 60 feet in length or less, and vessels greater than 60 feet. No trading of quota share blocks across vessel categories would be allowed.

Again, the consolidation constraints in the current plan would be maintained. In addition, a three block maximum consolidation constraint would be applied to each area. Since QS blocks cannot be traded across vessel categories, it was assumed herein that consolidation of blocks could only occur within a vessel category.

Table 3.3 provides summary details on blocks under this alternative by area and vessel category. The table also provides estimates by area of maximum potential consolidation. Note that to assure confidentiality, data categories have been combined in some areas and certain data have been deleted.

The estimated distribution is provided for blocks above and below the maximum block size in each category. Again, these blocks represent those that are remaining after blocks under 1,000 pounds have been consolidated. In most categories, the number of blocks below one-half of the maximum block size exceeds the number of blocks above one-half the maximum block size.

Within most area and vessel classes, there appears to be enough small blocks so that most persons could hold three blocks without exceeding an ownership cap. As a result, the estimated minimum number of block holders, should maximum potential consolidation occur, does not change substantially from Alternative 2H.

Under Alternative 3H, the estimated minimum number of block holders is highest in Area 3A, at 777. This would also represent a rough estimate of the minimum number of block holders across all areas should maximum consolidation occur.

A major goal of the Sitka Block amendment is to reduce consolidation relative to the current plan. The results suggest that adding these two catcher vessel size classes would not substantially alter the maximum potential for consolidation under the Sitka Block proposal. This is because there appears to be an adequate number of small blocks in most vessel categories to allow for such consolidations. However, it is possible that the distribution of blocks by catcher vessel size class could be affected by the presence or absence of the ban on trading between the two categories.

While maximum potential consolidation does not appear to be substantially impacted by the presence or absence of vessel categories, it would still become more difficult to find three blocks of the "right" size if blocks cannot be traded among vessel categories. Thus vessel category restrictions may have more of an impact on actual consolidation than this result would suggest.

TABLE 3.3.

Sitka Block Alternative 3H: HALIBUT
Estimated maximum consolidation of blocks by vessel length
class over and under 60 feet

Area	Vessel Length Class	Maximum Block Size (lbs. IFQ)	Blocks Above One-Half Maximum Block Size	Blocks Below One-Half Maximum Block Size	Total Blocks	Estimated Minimum Block Holders
2C	<= 60 ft	37,000	35	1,593	1,628	543
	> 60 ft	37,000	5	30	35	12
	Freezer \					
	Unknown	37,000	0	5	5	3
					-----	-----
					1,668	558
3A	<= 60 ft	107,351	43	2,017	2,060	687
	> 60 ft	107,351	64	190	254	85
	Freezer	107,351	*	*	7	3
	Unknown	107,351	0	4	4	2
					-----	-----
					2,325	777
3B	<= 60 ft	124,146	3	593	596	199
	> 60 ft	124,146	12	161	173	58
	Freezer	124,146	*	*	7	3
					-----	-----
					776	260
4A	<= 60 ft	9,577	65	160	225	75
	> 60 ft	9,577	81	59	140	47
	Freezer	9,577	*	*	5	2
					-----	-----
					370	124
4B	<= 60 ft	15,194	27	61	88	30
	> 60 ft	15,194	73	35	108	37
	Freezer	15,194	*	*	6	2
					-----	-----
					202	69
4C	<= 60 ft	11,837	30	37	67	23
	> 60 ft \					
	Freezer	11,837	17	13	30	11
					-----	-----
					97	34
4D	<= 60 ft	10,404	12	13	25	9
	> 60 ft	10,404	38	20	58	20
	Freezer	10,404	*	*	9	4
					-----	-----
					92	33
4E	All Vessels	44,640	0	52	52	19
					=====	=====
All Areas Total					5,582	1,873

Note: Asterisks have been inserted and/or vessel categories have been consolidated to preserve confidential data.

3.4 Alternative 4H: Three Catcher Boat Categories, a Freezer-Longliner Class, Three Block Max Consolidation Rule.

Alternative 4H would include three catcher vessel categories as well as a freezer-longliner class. The three catcher vessel categories are vessels of 35 feet in length or less, vessels from 36 to 60 feet, and vessels greater than 60 feet. These are the same vessel categories that are in the current halibut IFQ plan.

Again, the consolidation constraints in the current plan would be maintained. In addition, a three block maximum consolidation constraint would be applied to each area. Since blocks cannot be traded across vessel categories, it was assumed herein that consolidation of blocks could only occur within a vessel category.

Table 3.4 provides summary details on blocks under this alternative by area and vessel category. The table also provides estimates by area of maximum potential consolidation. Note that to assure confidentiality, data categories have been combined in some areas and certain data have been deleted.

The estimated distributions are provide for blocks above and below the maximum block size in each category. Again, these blocks represent those that are remaining after blocks under 1,000 pounds have been consolidated. In most categories, the number of blocks below one-half of the maximum block size exceeds the number of blocks above one-half the maximum block size.

Within most area and vessel classes, there are enough small blocks so that most persons could hold three blocks without exceeding an ownership cap. As a result, the estimated minimum number of block holders, should maximum potential consolidation occur, does not change substantially from Alternatives 2H or 3H. Under Alternative 4H, the estimated minimum number of block holders is highest in Area 3A, at 778. This would also represent a rough estimate of the minimum number of block holders across all areas should maximum consolidation occur.

A major goal of the Sitka Block amendment is to reduce consolidation relative to the current plan. The results suggest that adding these three catcher vessel categories would not substantially alter the maximum potential for consolidation under the Sitka Block proposal. This is because there appears to be an adequate number of small blocks in most vessel categories to allow for such consolidations. However, it is possible that the distribution of blocks by catcher vessel size category could be affected by the presence or absence of the ban on trading among the three categories.

While maximum potential consolidation does not appear to be substantially impacted by the presence or absence of these vessel categories, it would still become more difficult to find three blocks of the "right" size if blocks cannot be traded among vessel categories. Thus vessel category restrictions may have more of an impact on actual consolidation than this result would suggest.

TABLE 3.4. Sitka Block Alternative 4H: HALIBUT
Estimated maximum consolidation of blocks by vessel length class

Area	Vessel Length Class	Maximum Block Size (lbs. IFQ)	Blocks Above One-Half Maximum Block Size	Blocks Below One-Half Maximum Block Size	Total Blocks	Estimated Minimum Block Holders
2C	<= 35 ft	37,000	*	*	744	248
	36-60 ft	37,000	34	851	885	295
	> 60 ft	37,000	5	30	35	12
	Freezer \					
	Unknown	37,000	0	5	5	3
					-----	-----
					1,669	558
3A	<= 35 ft	107,351	0	812	812	271
	36-60 ft	107,351	43	1,206	1,249	417
	> 60 ft	107,351	64	190	254	85
	Freezer	107,351	*	*	7	3
	Unknown	107,351	0	4	4	2
					-----	-----
					2,326	778
3B	<= 35 ft	124,146	0	137	137	46
	36-60 ft	124,146	3	456	459	153
	> 60 ft	124,146	12	161	173	58
	Freezer	124,146	*	*	7	3
					-----	-----
					776	260
4A	<= 35 ft	9,577	4	69	73	25
	36-60 ft	9,577	61	92	153	51
	> 60 ft	9,577	81	59	140	47
	Freezer	9,577	*	*	5	2
					-----	-----
					371	125
4B	<= 35 ft	15,194	0	23	23	8
	36-60 ft	15,194	27	38	65	22
	> 60 ft	15,194	73	35	108	37
	Freezer	15,194	*	*	6	2
					-----	-----
					202	69
4C	<= 35 ft	11,837	14	19	33	11
	36-60 ft	11,837	16	18	34	12
	> 60 ft \					
	Freezer	11,837	17	13	30	11
					-----	-----
					97	34
4D	36-60 ft	10,404	12	13	25	9
	> 60 ft	10,404	38	20	58	20
	Freezer	10,404	*	*	9	4
					-----	-----
					92	33
4E	<= 35 ft	44,640	0	42	42	14
	36-60 ft	44,640	0	8	8	3
	> 60 ft \					
	Unknown	44,640	0	3	3	2
					-----	-----
					53	19
					=====	=====
All Areas Total					5,586	1,875

Note: Asterisks have been inserted and/to vessel categories have been consolidated to preserve confidential data.

3.5 Alternative 5H: Catcher Boat / Freezer-Longliner Distinction Only, Two Block Max Consolidation Rule

Alternative 5H is similar to the original Sitka Block proposal as explained in Alternative 2H, except that a person is only allowed to hold a maximum of two blocks in an area and only four blocks can be fished from a vessel. This rule will reduce the potential for consolidation relative to Alternative 2H.

Alternative 5H would eliminate size categories for catcher vessels, so that blocks could be traded among all catcher vessels. Blocks still could not be traded between catcher vessels and freezer-longliners. The ownership cap restrictions in the current IFQ plan would remain unchanged.

Table 3.5 provides summary details on blocks under this alternative by area and vessel category. The table also provides estimates by area of maximum potential consolidation. Note that to assure confidentiality, data categories have been combined in some areas and certain data have been deleted. Table 3.5 is identical to Table 3.2 except for the estimated minimum number of block holders.

The estimated distribution is provided for blocks above and below the maximum block size in each category. Again, these blocks represent those that are remaining after blocks under 1,000 pounds have been consolidated. In most categories, the number of blocks below one-half of the maximum block size exceeds the number of blocks above one-half the maximum block size.

The estimated minimum number of block holders under the two block consolidation rule is highest in Area 3A, at 1,163. This would also represent a rough estimate of the minimum number of block holders across all areas should maximum consolidation occur. The estimates, when compared with the status quo estimates, suggest that this alternative would reduce the potential for consolidation relative to the current plan.

Note that this is a considerable increase in the minimum number of block holders relative to Alternative 2H (776), as the maximum potential for consolidation has been reduced by using a "Two Block" rather than a "Three Block" rule.

The estimates in Table 3.5 represent the remaining number of block holders should maximum consolidation occur. Under Alternative 5H, up to four blocks could be fished from a vessel. If four blocks were fished from every vessel, the number of vessels would be lower than the number of block holders. The minimum number of vessels across all areas, if all boats utilized four quota share licenses, would be approximately 1/2 (50%) of the minimum number of block holders should maximum consolidation occur (582).

Again, the maximum potential consolidation represents an extreme estimate, and the authors suspect that the actual number of remaining block holders would be greater than these estimates should the amendment be adopted. However, if estimates of maximum potential consolidation provide a relative ranking of alternatives with respect to consolidation then consolidation of quota share holdings under Alternative 5H would likely be less than consolidation under the status quo, and less than under Alternatives 2H through 4H.

TABLE 3.5. Sitka Block Alternative 5H: HALIBUT 2, Block Rule
Estimated maximum consolidation of blocks by catcher
and freezer boat class

Area	Vessel Type	Binding Constraint (lbs. IFQ)	Blocks Above One-Half Binding Constraint	Blocks Below One-Half Binding Constraint	Total Blocks	Estimated Minimum Block Holders
2C	Catcher \ Freezer	37,000	40	1,627	1,667	834
3A	Catcher \ Freezer	107,351 107,351	107 *	2,210 *	2,317 7 ----- 2,324	1,159 4 ----- 1,163
3B	Catcher \ Freezer	124,146 124,146	15 *	753 *	768 7 ----- 775	384 4 ----- 388
4A	Catcher \ Freezer	9,577 9,577	146 *	218 *	364 5 ----- 369	182 3 ----- 185
4B	Catcher \ Freezer	15,194 15,194	100 *	95 *	195 6 ----- 201	98 3 ----- 101
4C	Catcher \ Freezer	11,837	47	50	97	49
4D	Catcher \ Freezer	10,404 10,404	50 *	33 *	83 9 ----- 92	42 5 ----- 47
4E	Catcher	44,640	0	50	50	25
All Areas Total					===== 5,575	===== 2,792

Note: Asterisks have been inserted and/or vessel categories have been consolidated to preserve confidential data.

3.6 Alternative 6H: Two Catcher Boat Categories, a Freezer-Longliner Class, Two Block Max Consolidation Rule.

Halibut Alternative 6H is similar to Alternative 3H, except that a person is only allowed to hold a maximum of two blocks in an area and only four blocks can be fished from a vessel. This rule will reduce the potential for consolidation relative to Alternative 3H.

Alternative 6H would include two catcher vessel categories as well as a freezer-longliner class. The two catcher vessel classes are vessels of 60 feet in length or less, and vessels greater than 60 feet. Under this alternative, no trading of QS or blocks across vessel categories would be allowed. Because of this, it was assumed herein that consolidation of blocks could only occur within a vessel category.

Table 3.6 provides summary details on blocks under this alternative by area and vessel category. The table also provides estimates by area of maximum potential consolidation. Note that to assure confidentiality, data categories have been combined in some areas and certain data have been deleted. Table 3.6 is identical to Table 3.3 except for the estimated minimum number of block holders.

The estimated distribution of blocks above and below the maximum block size in each category is provided. Again, these blocks represent those that are remaining after blocks under 1,000 pounds have been consolidated. In most categories, the number of blocks below one-half of the maximum block size exceeds the number of blocks above one-half the maximum block size.

The estimated minimum number of block holders under the two block consolidation rule is highest in Area 3A, at 1,163. This would also represent a rough estimate of the minimum number of block holders across all areas should maximum consolidation occur. The estimates, when compared with the status quo estimates, suggest that this alternative would reduce the potential for consolidation relative to the current plan.

Note that this is a considerable increase in the minimum number of block holders relative to Alternative 3H (777), as the maximum potential for consolidation has been reduced by using a "Two Block" rather than a "Three Block" rule. However, the estimates of the minimum number of block holders change very little from Alternative 5H, which imposes a "Two-Block" rule without catcher vessel categories.

A major goal of the Sitka Block amendment is to reduce consolidation relative to the current plan. The results again suggest that adding these two catcher vessel categories would not substantially alter the maximum potential for consolidation under the Sitka Block proposal. This is because there appears to be an adequate number of small blocks in most vessel categories to allow for such consolidations. However, it is possible that the distribution of blocks by catcher vessel size category could be affected by the presence or absence of the ban on trading between the two categories.

While maximum potential consolidation does not appear to be substantially impacted by the presence or absence of these vessel categories, it might still become more difficult to find two blocks of the "right" size if blocks cannot be traded among vessel categories. Thus vessel category restrictions may have more of an impact on actual consolidation than this result would suggest.

The estimates in Table 3.6 represent the remaining number of block holders should maximum consolidation occur. Under Alternative 6H, up to four blocks could be fished from a vessel. If four blocks were fished from every vessel, the number of vessels would be lower than the number of block holders. The minimum number of vessels if all vessels utilized four quota share licenses would be

approximately 1/2 (50%) of the minimum number of block holders should maximum consolidation occur (582).

Again, the maximum potential consolidation represents an extreme estimate, and the authors suspect that the actual number of remaining block holders would be greater than these estimates should the amendment be adopted. However, if estimates of maximum potential consolidation provide a relative ranking of alternatives with respect to consolidation, then consolidation of quota share holdings under Alternative 6H would likely be less than consolidation under the status quo, and less than under Alternatives 2H through 4H.

TABLE 3.6. Sitka Block Alternative 6H: HALIBUT, 2 Block Rule
Estimated maximum consolidation of blocks by vessel length
class over and under 60 feet

Area	Vessel Length Class	Maximum Block Size (lbs. IFQ)	Blocks Above One-Half Maximum Block Size	Blocks Below One-Half Maximum Block Size	Total Blocks	Estimated Minimum Block Holders
2C	<= 60 ft	37,000	35	1,593	1,628	814
	> 60 ft	37,000	5	30	35	18
	Freezer \					
	Unknown	37,000	0	5	5	3
					-----	-----
					1,668	835
3A	<= 60 ft	107,351	43	2,017	2,060	1,030
	> 60 ft	107,351	64	190	254	127
	Freezer	107,351	*	*	7	4
	Unknown	107,351	0	4	4	2
					-----	-----
					2,325	1,163
3B	<= 60 ft	124,146	3	593	596	298
	> 60 ft	124,146	12	161	173	87
	Freezer	124,146	*	*	7	4
					-----	-----
					776	389
4A	<= 60 ft	9,577	65	160	225	113
	> 60 ft	9,577	81	59	140	70
	Freezer	9,577	*	*	5	3
					-----	-----
					370	186
4B	<= 60 ft	15,194	27	61	88	44
	> 60 ft	15,194	73	35	108	54
	Freezer	15,194	*	*	6	3
					-----	-----
					202	101
4C	<= 60 ft	11,837	30	37	67	34
	> 60 ft \					
	Freezer	11,837	17	13	30	15
					-----	-----
					97	49
4D	<= 60 ft	10,404	12	13	25	13
	> 60 ft	10,404	38	20	58	29
	Freezer	10,404	*	*	9	5
					-----	-----
					92	47
4E	<= 60 ft	44,640	0	49	49	25
	> 60 ft \					
	Unknown		0	3	3	2
					-----	-----
					52	27
					=====	=====
All Areas Total					5,582	2,797

Note: Asterisks have been inserted and/or vessel categories have been consolidated to preserve confidential data.

3.7 Alternative 7H: Three Catcher Boat Categories, a Freezer-Longliner Class, Two Block Max Consolidation Rule.

Alternative 7H is similar to Alternative 4H, except that a person is only allowed to hold a maximum of two blocks in an area and only four blocks can be fished from a vessel. This rule will reduce the potential for consolidation relative to Alternatives 1 through 4H.

Alternative 7H would include three catcher vessel categories as well as a freezer-longliner class. The three catcher vessel categories are vessels of 35 feet in length or less, vessels from 36 to 60 feet, and vessels greater than 60 feet. Under this alternative, no trading of QS across vessel categories would be allowed.

Table 3.7 provides summary details on blocks under this alternative by area and vessel category. The table also provides estimates of maximum potential consolidation. Note that to assure confidentiality, data categories have been combined in some areas and certain data have been deleted. Table 3.7 is identical to Table 3.4 except for the estimated minimum number of block holders.

The estimated distribution of blocks above and below the maximum block size in each category is provided. Again, these blocks represent those that are remaining after blocks under 1,000 pounds have been consolidated. In most categories, the number of blocks below one-half of the maximum block size exceeds the number of blocks above one-half the maximum block size.

The estimated minimum number of block holders under the two block consolidation rule is highest in Area 3A, at 1,164. This would also represent a rough estimate of the minimum number of block holders across all areas should maximum consolidation occur.

Note that this is a considerable increase in the minimum number of block holders relative to Alternative 4H (778), as the maximum potential for consolidation has been reduced by using a "Two Block" rather than a "Three Block" rule. However, the estimates of the minimum number of block holders vary little from Alternatives 5H and 6H.

A major goal of the Sitka Block amendment is to reduce consolidation relative to the current plan. The results again suggest that adding these three catcher vessel categories would not substantially alter the maximum potential for consolidation under the Sitka Block proposal. This is because there appear to be adequate numbers of small blocks in most vessel categories to allow for such consolidations. However, it is possible that the distribution of blocks by catcher vessel size category could be affected by the presence or absence of the ban on trading among the three categories.

While maximum potential consolidation does not appear to be substantially impacted by the presence or absence of these vessel categories, it might still become more difficult to find two blocks of the "right" size if blocks cannot be traded among vessel categories. Thus vessel category restrictions may have more of an impact on actual consolidation than this result would suggest.

The estimates in Table 3.7 represent the remaining number of block holders should maximum consolidation occur. Under Alternative 7H, up to four blocks could be fished from a vessel. If four blocks were fished from every vessel, the number of vessels would be lower than the number of block holders. The minimum number of vessels over all areas, if all vessels utilized four quota share licenses, would be approximately 1/2 (50%) of the minimum number of block holders should maximum consolidation occur (582).

Again, the maximum potential consolidation represents an extreme estimate, and the authors suspect that the actual number of remaining block holders would be greater than these estimates should the amendment be adopted. However, if estimates of maximum potential consolidation provide a relative ranking of alternatives with respect to consolidation, then consolidation of quota share holdings under Alternative 7H would likely be less than consolidation under the status quo, and less than under Alternatives 2H through 4H.

TABLE 3.7. Sitka Block Alternative 7H: HALIBUT, 2 Block Rule
Estimated maximum consolidation of blocks by vessel length class

Area	Vessel Length Class	Maximum Block Size (lbs. IFQ)	Blocks Above One-Half Maximum Block Size	Blocks Below One-Half Maximum Block Size	Total Blocks	Estimated Minimum Block Holders
2C	<= 35 ft	37,000	*	*	744	372
	36-60 ft	37,000	34	851	885	443
	> 60 ft	37,000	5	30	35	18
	Freezer \ Unknown	37,000	0	5	5	3
					----- 1,669	----- 836
3A	<= 35 ft	107,351	0	812	812	406
	36-60 ft	107,351	43	1,206	1,249	625
	> 60 ft	107,351	64	190	254	127
	Freezer	107,351	*	*	7	4
	Unknown	107,351	0	4	4	2
					----- 2,326	----- 1,164
3B	<= 35 ft	124,146	0	137	137	69
	36-60 ft	124,146	3	456	459	230
	> 60 ft	124,146	12	161	173	87
	Freezer	124,146	*	*	7	4
					----- 776	----- 390
4A	<= 35 ft	9,577	4	69	73	37
	36-60 ft	9,577	61	92	153	77
	> 60 ft	9,577	81	59	140	70
	Freezer	9,577	*	*	5	3
					----- 371	----- 187
4B	<= 35 ft	15,194	0	23	23	12
	36-60 ft	15,194	27	38	65	33
	> 60 ft	15,194	73	35	108	54
	Freezer	15,194	*	*	6	3
					----- 202	----- 102
4C	<= 35 ft	11,837	14	19	33	17
	36-60 ft	11,837	16	18	34	17
	> 60 ft \ Freezer	11,837	17	13	30	15
					----- 97	----- 49
4D	36-60 ft	10,404	12	13	25	13
	> 60 ft	10,404	38	20	58	29
	Freezer	10,404	*	*	9	5
					----- 92	----- 47
4E	<= 35 ft	44,640	0	42	42	21
	36-60 ft	44,640	0	8	8	4
	> 60 ft \ Unknown	44,640	0	3	3	2
					----- 53	----- 27
All Areas Total					=====	=====
					5,586	2,802

Note: Asterisks have been inserted and/or vessel categories have been consolidated to preserve confidential data.

3.8 Alternative 8S: Catcher Boat/Freezer-Longliner Distinction Only, Three Block Max Consolidation Rule

The first alternative for sablefish is the original Sitka Block proposed amendment. Here size categories would be eliminated for catcher vessel categories, and blocks could be traded among all catcher vessels. Blocks still could not be traded between catcher vessels and freezer-longliners. The ownership cap restrictions in the current IFQ plan would remain unchanged.

Alternative 8S uses maximum block sizes as previously described. In the examples herein, maximum block sizes have been translated into IFQs given 1991 TACs. Sablefish blocks with QS which were worth less than 3,000 pounds of IFQ could be combined as long as the QS are not worth more than 3,000 pounds of IFQ in the implementation year.

While trading among all catcher vessels would be allowed under the proposal, a new consolidation constraint is imposed by the alternative. A person is restricted to holding a maximum of three blocks in an area on an ongoing basis, and only five blocks can be fished from a vessel.

Table 3.8 provides summary details on blocks by area. The table also provides estimates by area of maximum potential consolidation under this alternative. Note that to assure confidentiality, data categories have been combined in some areas and certain data have been deleted.

Table 3.8 provides the maximum block sizes by area. Again, these were calculated using 1991 TACs. As can be seen, these maximum block sizes for sablefish vary widely, from 51,842 in the Southeast Outside regulatory district, to 327,945 pounds in the Bering Sea area.³⁵

The table provides the estimated distribution of blocks above and below the maximum block size in each area. These blocks represent those that are remaining after blocks under 3,000 pounds have been consolidated. In all areas, the number of blocks below one-half of the maximum block size exceeds the number of blocks above one-half the maximum block size.

To calculate the minimum number of block holders, it was assumed herein that as long as the number of blocks below one-half the maximum block size was no less than half the number of blocks above one-half the maximum block size, then persons would be able to find three blocks with a combined number of QS that would not exceed the most restrictive ownership cap. In such cases, the maximum potential consolidation was calculated by dividing the number of blocks by three. If the division resulted in a remainder, the result was rounded up to the nearest whole number. As can be seen, this rule was applied to estimate the minimum number of block holders in all areas.

The estimated minimum numbers of block holders that would result if the maximum potential consolidation occurred are shown in the last column of Table 3.8. These estimates are shown by area. If maximum potential consolidation occurred, these estimates suggest that the Southeast Outside regulatory area would have the largest remaining number of block holders at 186.³⁶

The minimum number of block holders across all areas cannot be calculated by this method. Nevertheless, an examination of the ownership restrictions suggests that the global minimum across

³⁵Recall that the maximum block sizes may be different in the implementation year, as the ownership cap restrictions will be applied to different TACs.

³⁶Note that this analysis does not consider CDQ compensation.

all areas might approach the highest remaining number of block holders in any one area. Again, this would be 186. The estimates, when compared with the status quo estimates, suggest that Alternative 8S would reduce the maximum potential for consolidation relative to the current plan.

The estimates in Table 3.8 represent the remaining number of block holders or QSL holders should maximum consolidation occur. Under Alternative 8S, up to five blocks could be fished from a vessel. If five blocks were fished from every vessel, the number of vessels would be lower than the number of block holders. The minimum number of vessels across all areas, if all boats utilized five quota share licenses, would be approximately 3/5 (60%) of the number of block holders should maximum consolidation occur (112).

Again, the maximum potential consolidation represents an extreme estimate, and the authors suspect that the actual number of remaining block holders would be greater than these estimates should the amendment be adopted. However, if estimates of maximum potential consolidation provide a relative ranking of alternatives with respect to consolidation, then consolidation of quota share holdings under Alternative 8S would likely be less than consolidation under the current plan.

TABLE 3.8. Sitka Block Alternative 8S: SABLEFISH
Estimated maximum consolidation of blocks by catcher
and freezer boat class

Area	Vessel Type	Maximum Block Size (lbs. IFQ)	Blocks Above One-Half Maximum Block Size	Blocks Below One-Half Maximum Block Size	Total Blocks	Estimated Minimum Block Holders
Aleutians	Catcher Freezer	267,377	*	*	91	31
		267,377	7	26	33	11
					----- 124	----- 42
Bering Sea	Catcher Freezer	327,945	*	*	90	30
		327,945	*	*	27	9
					----- 117	----- 39
Central Gulf	Catcher Freezer	261,427	25	388	413	138
		261,427	6	22	28	10
					----- 441	----- 148
Southeast outside	Catcher Freezer	51,842	149	399	548	183
		51,842	*	*	7	3
					----- 555	----- 186
Western Gulf	Catcher Freezer	233,177	7	119	126	42
		233,177	6	23	29	10
					----- 155	----- 52
West Yakutat	Catcher Freezer	249,778	11	282	293	98
		249,778	0	11	11	4
					----- 304	----- 102
All Areas Total					===== 1,696	===== 569

Note: Asterisks have been inserted and/or vessel categories have been consolidated to preserve confidential data.

3.9 Alternative 9S: Two Catcher Boat Categories, a Freezer-Longliner Class, Three Block Max Consolidation Rule.

Sablefish Alternative 9S would include two catcher vessel categories as well as a freezer-longliner class. The two catcher vessel classes are vessels of 60 feet in length or less, and vessels greater than 60 feet. These are the same size categories that are in the current sablefish IFQ plan.

Again, the consolidation constraints in the current plan would be maintained. In addition, a three block maximum consolidation constraint would be applied to each area. Since blocks cannot be traded across vessel categories, it was assumed herein that consolidation of blocks could only occur within a vessel category.

Table 3.9 provides summary details on blocks under this alternative by area and vessel category. The table also provides estimates by area of maximum potential consolidation. Note that to assure confidentiality, data categories have been combined in some areas and certain data have been deleted.

The estimated distribution of blocks above and below the maximum block size in each category is provided. Again, these blocks represent those that are remaining after blocks under 3,000 pounds have been consolidated. In all categories, the number of blocks below one-half of the maximum block size exceeds the number of blocks above one-half the maximum block size.

Within most area and vessel classes, there appear to be enough small blocks so that most persons could hold three blocks without exceeding an ownership cap. As a result, the estimated minimum number of block holders, should maximum potential consolidation occur, does not change substantially from Alternative 8S.

Under Alternative 9S, the estimated minimum number of sablefish block holders is highest in the East Southeast Outside regulatory district, at 187. This would also represent a rough estimate of the minimum number of block holders across all areas should maximum consolidation occur.

A major goal of the Sitka Block amendment is to reduce consolidation relative to the current plan. The results suggest that adding these two catcher vessel categories would not substantially alter the maximum potential for consolidation under the Sitka Block proposal. This is because there appears to be an adequate number of small blocks in most vessel categories to allow for such consolidations. However, it is possible that the distribution of blocks by catcher vessel size category could be affected by the presence or absence of the ban on trading between the two categories.

While maximum potential consolidation does not appear to be substantially impacted by the presence or absence of these vessel categories, it would still become more difficult to find three blocks of the "right" size if blocks cannot be traded among vessel categories. Thus vessel category restrictions may have more of an impact on actual consolidation than this result would suggest.

TABLE 3.9. Sitka Block Alternative 9S: SABLEFISH
Estimated maximum consolidation of blocks by vessel length class
over and under 60 feet

Area	Vessel Length Class	Maximum Block Size (lbs. IFQ)	Blocks Above One-Half Maximum Block Size	Blocks Below One-Half Maximum Block Size	Total Blocks	Estimated Minimum Block Holders
Aleutians	<= 60 ft	267,377	0	43	43	15
	> 60 ft	267,377	*	*	49	17
	Freezer	267,377	7	26	33	11
					----- 125	----- 43
Bering Sea	<= 60 ft	327,945	0	49	49	17
	> 60 ft	327,945	*	*	42	14
	Freezer	327,945	*	*	27	9
					----- 118	----- 40
Central Gulf	<= 60 ft	261,427	11	272	283	95
	> 60 ft	261,427	14	112	126	42
	Freezer	261,427	6	22	28	10
	Unknown	261,427	0	5	5	2
					----- 442	----- 149
Southeast outside	<= 60 ft	51,842	123	350	473	158
	> 60 ft	51,842	26	43	69	23
	Freezer	51,842	*	*	7	3
	Unknown	51,842	0	7	7	3
					----- 556	----- 187
Western Gulf	<= 60 ft	233,177	*	*	71	24
	> 60 ft	233,177	6	49	55	19
	Freezer	233,177	6	23	29	10
					----- 155	----- 53
West Yakutat	<= 60 ft	249,778	6	191	197	66
	> 60 ft	249,778	5	90	95	32
	Freezer	249,778	0	11	11	4
	Unknown	249,778	0	3	3	1
					----- 306	----- 103
					=====	=====
All Areas Total					1,702	575

Note: Asterisks have been inserted and/or vessel categories have been consolidated to preserve confidential data.

3.10 Alternative 10S: Catcher Boat / Freezer-Longliner Distinction Only, Two Block Max Consolidation Rule

Alternative 10S for sablefish is similar to the original Sitka Block proposal as explained in Alternative 8S, except that a person is only allowed to hold a maximum of two blocks in an area and only four blocks can be fished from a vessel. This rule will reduce the potential for consolidation relative to Alternative 8S.

Alternative 10S would eliminate size categories for catcher vessels, so that blocks could be traded among all catcher vessels. Quota share licenses still could not be traded between catcher vessels and freezer-longliners. The ownership cap restrictions in the current IFQ plan would remain unchanged.

Table 3.10 provides summary details on blocks under this alternative by area and vessel category. The table also provides estimates by area of maximum potential consolidation. Note that to assure confidentiality, data categories have been combined in some areas and certain data have been deleted. Table 3.10 is identical to Table 3.8 except for the estimated minimum number of block holders.

The estimated distribution of blocks above and below the maximum block size in each category is provided. Again, these blocks represent those that are remaining after blocks under 3,000 pounds have been consolidated. In all categories, the number of blocks below one-half of the maximum block size exceeds the number of blocks above one-half the maximum block size.

The estimated minimum number of block holders under this alternative was made simply by dividing the number of blocks by two. If the division resulted in a remainder, the result was rounded up to the nearest whole number.

The estimated minimum number of sablefish block holders under the two block consolidation rule is highest in the Southeast Outside regulatory district at 278. This number is also a rough estimate of the minimum number of block holders across all areas should maximum consolidation occur. The estimates, when compared with the status quo estimates, suggest that Alternative 10S would reduce the potential for consolidation relative to the current plan.

Note that this is a considerable increase in the minimum number of block holders relative to Alternative 8S (187), as the maximum potential for consolidation has been reduced by using a "Two Block" rather than a "Three Block" rule.

The estimates in Table 3.10 represent the remaining number of block holders or QSL holders should maximum consolidation occur. Under Alternative 10S, up to four blocks could be fished from a vessel. If four blocks were fished from every vessel, the number of vessels would be lower than the number of block holders. The minimum number of vessels if all boats utilized four quota share licenses would be approximately 1/2 of the minimum number of block holders should maximum consolidation occur (139).

Again, the maximum potential consolidation represents an extreme estimate, and the authors suspect that the actual number of remaining block holders would be greater than these estimates should the amendment be adopted. However, if estimates of maximum potential consolidation provide a relative ranking of alternatives with respect to consolidation, then consolidation of quota share holdings under Alternative 10S would likely be less than consolidation under the status quo, and less than under sablefish Alternatives 8S through 9S.

TABLE 3.10. Sitka Block Alternative 10S: SABLEFISH, 2 Block rule
Estimated maximum consolidation of blocks by catcher
and freezer boat class

Area	Vessel Type	Maximum Block Size (lbs. IFQ)	Blocks Above One-Half Maximum Block Size	Blocks Below One-Half Maximum Block Size	Total Blocks	Estimated Minimum Block Holders
Aleutians	Catcher Freezer	267,377	*	*	91	46
		267,377	7	26	33	17
					-----	-----
					124	63
Bering Sea	Catcher Freezer	327,945	*	*	90	45
		327,945	*	*	27	14
					-----	-----
					117	59
Central Gulf	Catcher Freezer	261,427	25	388	413	207
		261,427	6	22	28	14
					-----	-----
					441	221
Southeast Outside	Catcher Freezer	51,842	149	399	548	274
		51,842	*	*	7	4
					-----	-----
					555	278
Western Gulf	Catcher Freezer	233,177	7	119	126	63
		233,177	6	23	29	15
					-----	-----
					155	78
West Yakutat	Catcher Freezer	249,778	11	282	293	147
		249,778	0	11	11	6
					-----	-----
					304	153
					=====	=====
All Areas Total					1,696	852

Note: Asterisks have been inserted and/or vessel categories have been consolidated to preserve confidential data.

3.11 Alternative 11S: Two Catcher Boat Categories, a Freezer-Longliner Class, Two Block Max Consolidation Rule.

Alternative 11S is similar to Alternative 9S, except that a person is only allowed to hold a maximum of two blocks in an area and only four blocks can be fished from a vessel. This rule will reduce the potential for consolidation relative to Alternative 9S.

Alternative 11S would retain two catcher vessel classes as well as a freezer-longliner class. The two catcher vessel classes are vessels of 60 feet in length or less, and vessels greater than 60 feet. Under this alternative, no trading of quota share blocks across vessel categories would be allowed. Because of this, it was assumed herein that consolidation of blocks could only occur within a vessel category.

Table 3.11 provides summary details on blocks under this alternative by area and vessel category. The table also provides estimates of maximum potential consolidation by area. Note that to assure confidentiality, data categories have been combined in some areas and certain data have been deleted. Table 3.11 is identical to Table 3.9 except for the estimated minimum number of block holders.

The estimated distribution of blocks above and below the maximum block size in each category is provided. Again, these blocks represent those that are remaining after blocks under 3,000 pounds have been consolidated. In all categories, the number of blocks below one-half of the maximum block size exceeds the number of blocks above one-half the maximum block size.

The estimated minimum number of block holders under this alternative was made simply by dividing the number of blocks by two. If the division resulted in a remainder, the result was rounded up to the nearest whole number.

The estimated minimum number of block holders under the two block consolidation rule is again highest in the Southeast Outside regulatory district, at 280. This would also represent a rough estimate of the minimum number of sablefish block holders across all areas should maximum consolidation occur. The estimates, when compared with the status quo estimates, suggests that this alternative would reduce the potential for consolidation relative to the current plan.

Note that this is a considerable increase in the minimum number of block holders relative to Alternative 9S (187), as the maximum potential for consolidation has been reduced by using a "Two Block" rather than a "Three Block" rule. However, the estimates of the minimum number of block holders are not substantially different from Alternative 10S which imposes a "Two-Block" rule without catcher vessel categories.

A major goal of the Sitka Block amendment is to reduce consolidation relative to the current plan. The results again suggest that adding these two catcher vessel categories would not substantially alter the maximum potential for consolidation under the Sitka Block proposal. This is because there appears to be an adequate number of small blocks in most vessel categories to allow for such consolidations. However, it is possible that the distribution of blocks by catcher vessel size category could be altered by the presence or absence of the ban on trading between the two categories.

While maximum potential consolidation does not appear to be substantially impacted by the presence or absence of these vessel categories, it might still become more difficult to find two blocks of the "right" size if blocks cannot be traded among vessel categories. Thus vessel category restrictions may have more of an impact on actual consolidation than this result would suggest.

The estimates in Table 3.11 represent the remaining number of block holders should maximum consolidation occur. Under Alternative 11S, up to four blocks could be fished from a vessel. If four blocks were fished from every vessel, the number of vessels would be lower than the number of block holders. The minimum number of vessels if all utilized four quota share licenses would be approximately 1/2 of the minimum number of block holders should maximum consolidation occur (140 vessels).

Again, the maximum potential consolidation represents an extreme estimate, and the authors suspect that the actual number of remaining block holders would be greater than these estimates should the amendment be adopted. However, if estimates of maximum potential consolidation provide a relative ranking of alternatives with respect to consolidation, then consolidation of quota share holdings under Alternative 11S would likely be less than consolidation under the status quo, and less than under sablefish Alternatives 8S and 9S.

TABLE 3.11. Sitka Block Alternative 11S: SABLEFISH, 2 Block rule
Estimated maximum consolidation of blocks by vessel length class
over and under 60 feet

Area	Vessel Length Class	Maximum Block Size (lbs. 1FQ)	Blocks Above One-Half Maximum Block Size	Blocks Below One-Half Maximum Block Size	Total Blocks	Estimated Minimum Block Holders
Aleutians	<= 60 ft	267,377	0	43	43	22
	> 60 ft	267,377	*	*	49	25
	Freezer	267,377	7	26	33	17
					-----	-----
					125	64
Bering Sea	<= 60 ft	327,945	0	49	49	25
	> 60 ft	327,945	*	*	42	21
	Freezer	327,945	*	*	27	14
					-----	-----
					118	60
Central Gulf	<= 60 ft	261,427	11	272	283	142
	> 60 ft	261,427	14	112	126	63
	Freezer	261,427	6	22	28	14
	Unknown	261,427	0	5	5	3
					-----	-----
					442	222
Southeast Outside	<= 60 ft	51,842	123	350	473	237
	> 60 ft	51,842	26	43	69	35
	Freezer	51,842	*	*	7	4
	Unknown	51,842	0	7	7	4
					-----	-----
					556	280
Western Gulf	<= 60 ft	233,177	*	*	71	36
	> 60 ft	233,177	6	49	55	28
	Freezer	233,177	6	23	29	15
					-----	-----
					155	79
West Yakutat	<= 60 ft	249,778	6	191	197	99
	> 60 ft	249,778	5	90	95	48
	Freezer	249,778	0	11	11	6
	Unknown	249,778	0	3	3	2
					-----	-----
					306	155
					=====	=====
All Areas Total					1,702	860

Note: Asterisks have been inserted and/or vessel categories have been consolidated to preserve confidential data.

3.12 Reporting Costs

None of the Sitka Block proposed alternatives (2H through 7H and 8S through 11S) would change the initial distribution of QS or IFQ relative to the current plan (Alternative 1). The information which applicants will need to provide should not change under any of the alternatives. Thus reporting costs for the applicants during the initial allocation process should not change under any of the alternatives.

Attaching QS to blocks, sweeping up procedures, and constraints on block holdings may alter the behavior and the holdings of many participants relative to the current plan. Nevertheless, any increased tracking requirements and costs that would result from a Sitka Block amendment would largely fall upon the IFQ plan administrator.

3.13 Administrative, Enforcement and Information Costs

The Sitka Block proposed amendment might add additional conditions which will make it difficult to initiate the program before all qualifying pound appeals are resolved. QS cannot be put into blocks until qualifying pounds are known. Maximum block sizes cannot be calculated precisely until all qualifying pounds are known. The blocks that exceed the maximum block size and need to be "split up" are unknown until all qualifying pounds are known. The quota share equivalent of the largest block size allowed under the "sweeping up" provisions cannot be calculated precisely until all qualifying pounds are known. Quota share transfers could not occur until the amount which belongs in the block is known.

However, the same problem already exists under the current IFQ program with respect to suggested CDQ compensation procedures. These procedures also can not be implemented precisely unless total qualifying pounds in each area are known. Thus, in a sense, the Sitka Block proposed amendment may not delay implementation any more than the current plan.

However, the proposed amendment would add further to the complexity of the IFQ plan. If the IFQ program is implemented before all QS appeals are resolved, the plan administrator will need to develop rules for handling these complications.

The Sitka Block proposed amendment also might impact NMFS's administrative and enforcement costs relative to the current IFQ program. Nevertheless, the "net impact" on these costs is difficult to predict.

The need to monitor additional sets of constraints may increase such costs. Enforcement and administrative costs may also increase if more fishing operations remain in the fishery because of the amendment. However, other aspects of the proposed amendment may decrease costs.

For example, to the extent that it will be more difficult and costly in terms of time and money for fishermen to find and purchase (or sell) a particular amount of QS, the volume of transfers per person may be lower than under the current IFQ plan. This may be offset somewhat if more persons remain involved in the fishery because of the new constraints. However, if the total volume of transfers is reduced (and if NMFS's administrative costs increase with each transfer) then administrative costs associated with transfers may fall.

NMFS enforcement currently plans to sample only a portion of transfer transactions for violations of transfer restrictions under the IFQ program. Dave Flannagan, Special Agent in Charge (NMFS

Office of Enforcement), has indicated that a lower volume of transfers will not lower transfer enforcement costs, but will allow NMFS to examine a higher percentage of the transfers and thereby improve enforcement of sundry transfer restriction provisions.

If the Sitka Block proposed amendment would eliminate catcher vessel length categories, then some administrative and enforcement costs (or tasks) might also be reduced. NMFS would no longer have to be concerned about the actual length of a vessel and would not have to be concerned about monitoring landings and landing records to make sure that a person's IFQ was being used on a vessel of appropriate size. This would either reduce administration and enforcement costs or release these resources to allow a better job on other IFQ management tasks.

The Sitka Block Proposed Amendment may change administrative and enforcement costs or the administrative tasks involved relative to the current plan. Nevertheless, at this time, it is difficult to predict whether the net impact on administrative and enforcement costs will be positive or negative.

3.14 Economic Efficiency Implications of the Sitka Block Proposed Amendment

A major objective of the current IFQ plan is to increase the net economic benefits which are derived from Alaska's halibut and sablefish fisheries. Estimates made in previous Council documents suggest that the net benefits resulting from the program should be large.³⁷

Nevertheless, the IFQ program clearly has multiple objectives. Provisions in the plan seek to find a balance between economic efficiency gains and preserving the composition and diversity of the current fishing fleet.

For example, the Council created catcher vessel categories and a freezer-longliner category and established rules that QS initially allocated to each vessel category cannot be transferred to another class. The program also established quota share and IFQ ownership caps which may further limit the potential amount of consolidation that could occur.

Proponents of the Sitka Block proposed amendment fear that the current plan does not go far enough to preserve the present composition and diversity of the fleet. The Sitka Block proposed amendment would not alter the initial distribution of QS. However, the Sitka Block proposed amendment may have implications for fleet consolidation, maintaining fleet diversity, and the net economic benefits which are produced by the IFQ program.

This section briefly discusses some ways that the Sitka Block proposed amendment might alter net economic benefits relative to the current program. As an accurate estimate of the change in net benefits would be difficult to make, the concentration herein is on a qualitative discussion of the "direction" of change rather than a quantitative estimate of the absolute amount of the change.

3.14.1 Increased Search and Transactions Costs

Under the current plan, persons may permanently sell any portion of their quota share holdings. This "divisibility" of quota share holdings should serve to reduce search (finding a willing buyer or seller with the desired amount of QS) and transactions (negotiating and completing a transfer) costs for fishermen seeking to buy or sell QS.

³⁷See The Supplemental Analysis, Sections 2.2 through 2.2.31.

For a given area and vessel category, every quota share is the same under the IFQ program. A fisherman who wants to buy a certain amount of QS could buy a portion of the amount from any willing quota share holder. Likewise a fisherman who wants to sell a certain amount of QS could sell portions of the amount to many different buyers.

The divisibility of quota share holdings and the homogeneity of a quota share for an area and vessel category should serve to facilitate permanent transfers and reduce the costs of transfers to fishermen. The current IFQ plan serves that function.

In contrast, the Sitka Block proposed amendment will increase search and transactions costs to fishermen relative to the current plan. Quota share holdings will not be divisible and can only be permanently transferred as a "block". Each block may be unique, as the amount of QS within a block will vary widely.

Under such conditions, a fisherman who wants to buy a certain amount of QS must search for a willing seller with a block of approximately the right amount. In cases where the fisherman already holds the maximum number of blocks for an area, the fisherman will have to find a willing buyer who wants an amount of QS approximately equal to those contained in one of the fisherman's blocks and a willing seller who has a block of appropriate size so that the fisherman will have the desired amount of QS after all transactions are completed.

The Sitka Block proposed amendment would increase the search and transactions costs associated with transfers of quota share holdings. These costs will be absorbed by buyers and sellers of QS who try to make exchanges to alter their holdings. While QS brokers and/or other intermediaries will likely develop to reduce these costs and facilitate transfers, these costs likely will still be high relative to the current program.

While higher search and transactions costs associated with transfers will serve to reduce the net benefits generated by the IFQ program, the actual magnitude of these costs and the reduction in net benefits are difficult to estimate. This loss in net benefits must be balanced against other potential gains in net benefits and/or the distributional objectives of the Council.

In the original Sitka Block amendment proposal (Alternatives 2H, 5H, 8S, and 10S) catcher vessel categories would be eliminated. Thus transfers of blocks across vessel categories would be allowed, unlike the current plan which does not allow such transfers. The fact that blocks could be bought and sold across vessel classes may help offset the increase in search and transactions costs associated with the "all or nothing" block permanent transfer rule. However, in some of the Sitka Block alternatives examined herein (4H, 7H, 9S, and 11S) the current restrictions on transfers across vessel classes are maintained.

3.14.2 Net Economic Benefits Resulting From Consolidation.

An important function of adequately specified use-privileges is to create incentives to use resources efficiently. The Council anticipates that the halibut and sablefish IFQ program will reduce the costs associated with the "race for the fish" and will create an environment whereby fishermen can find the most profitable means to harvest and market their IFQ.

Even without quota share transferability, an IFQ program would be expected to provide fishermen with greater in-season flexibility with respect to the timing of their harvest and utilization of their IFQs. Transferable use-privileges and a free market create incentives for resources to flow to their

highest-valued use. An IFQ program represents a fishery management approach designed to achieve the economic efficiency objective.

As previously noted, the current program represents a mix of economic efficiency and distributional objectives. While the ability to permanently transfer QS exist under the program, there are constraints on the amount of QS which can be held by a person. There are also caps on the amount of QS which can be fished from a vessel and restrictions on transferring QS across vessel categories. This latter restriction effectively creates separate markets for QS for each vessel class in each area.

All of these restrictions were included in the current plan to constrain the amount of consolidation that can occur and to help preserve some of the fleet's current diversity. Nevertheless, previous Council analyses suggest that there may be a considerable consolidation of QS under an IFQ program with unrestricted transferability.³⁸ The maximum possible consolidation of QS under the current plan was reviewed in Section 3.1 above.

It is likely that the Sitka Block proposal will increase the number of QS holders and vessels that will be involved in the taking of the TAC. Rough estimates of the maximum potential consolidation under Sitka Block alternatives were provided in Sections 3.2 through 3.11. To the extent that the new Sitka Block amendment constraints would prevent some exchanges that would otherwise occur under the plan, net economic benefits of the IFQ program will be reduced.

3.14.3 New Restrictions On Financing

The Sitka Block proposal would add some new restrictions on financing relative to the current plan. Discussions with the originators of the proposal suggested that the function of the new provision is to prevent financing contracts that would restrict the use of the QS for the holder. The originators of the proposal indicated that this provision was not intended to prevent time payment contracts between buyers and sellers whereby the seller could regain control of the QS if the buyer failed to make payments.

The originators of the proposal appear to be concerned about certain types of contracts whereby the owner of QS would sacrifice control over those QS in return for financing. The precise intentions of the provision need to be more clearly spelled out by the proponents, particularly the types of contracts they regard as desirable and undesirable. To the extent that new restrictions would prevent voluntary contracting that would otherwise occur, net economic benefits of the program might be reduced.

3.15 Discussion of Other Aspects of the Proposed Amendment

Proponents of the Sitka Block amendment make a number of predictions about the expected results should the amendment be adopted. These predictions, noted above, include the continued existence of a large, diverse fishing fleet, the protection of coastal communities by maintaining traditional delivery patterns, the availability of small, inexpensive blocks of quota for entry level fishermen, and a more simple system of program administration and enforcement. Some of these predictions or forecasts appear to be somewhat uncertain. Dr. Joe Terry, an economist with the NMFS's Alaska

³⁸See Supplemental Analysis, Chapter 2.0.

Fisheries Science Center, has outlined some possible problems with some of the forecasted results.³⁹

Among the points made by Dr. Terry are the following:

1. Although the price of a small block will be less than the price of a large block, the price per pound of QS will not necessarily be less with small blocks. Dr. Terry notes that the price per pound of particular block sizes will depend upon supply and demand. He argues that if small blocks are in heavy demand by salmon trollers and other fixed-gear fishermen (so that they can market their bycatch of IFQ species) then the price per pound for small blocks might be higher than the price per pound of large blocks. If so, he sees no advantage of the Sitka Block proposal to a small boat fisherman. Under the present program, QS could be purchased in very small quantities.
2. If vessel categories are removed, it is not clear that the proposal provides more protection for small vessels than does the current plan. Under the current plan, the QS which are initially allocated will remain within the vessel category. If vessel categories are removed under the Sitka block proposal, large vessels could purchase the QS of smaller vessels.
3. Dr. Terry disagrees that the Sitka Block proposed amendment offers a simpler method of protection than does the current IFQ plan. He argues that the need to monitor blocks will add to the administrative and enforcement complexity of IFQs. He also argues that increased transactions costs will be imposed on all fishermen who buy and sell IFQs.

Both Dr. Terry and the Sitka Block proponents agree that the amendment will increase the minimum number of QS holders and vessels that will remain involved in the fishery. However, there are disagreements about the likely effects of other aspects of the proposal.

The Sitka Block proposed amendment will also create some very large blocks that cannot be "broken up" for transfer purposes. Marcus Hartley, staff economist with the Council, has suggested that purchases of large blocks may prove to be more difficult to finance than would purchases of smaller blocks. If so, this may lower the price per quota share of larger blocks. Part of the rationale for the Full/Partial Block proposal, discussed in Part II of this report, is to avoid creating extremely large blocks that may prove to be more difficult to transfer.

To the extent that the Sitka Block amendment would reduce consolidation in these fisheries, there will be more fishing operations to monitor than under the current program. This factor, coupled with the additional constraints placed on the plan, would likely raise administration and enforcement costs.

Nevertheless, other aspects of the proposed amendment might lower some costs or release administrative and enforcement resources for other tasks. The Sitka Block alternatives which remove or reduce catcher boat size classes will eliminate or reduce the need to enforce and monitor such restrictions. To the extent that the Sitka Block proposal would reduce the volume of QS transfers and/or the number of transfer transactions per time period, administrative and enforcement costs could be reduced or resources could be redirected toward other tasks.

³⁹See Joe Terry's memorandum to Jay Ginter (dated May 7, 1992) in Appendix B. Dr. Terry's discussion covers economic efficiency, equity, and other distributional issues.

In summary, the Sitka Block alternatives could change the current IFQ program in several ways. While precise forecasts of those changes are impossible, it is likely that the cost of this amendment to "insure" against overly disruptive socioeconomic changes will come in some reduction in the net economic benefits of the IFQ program.

Under Executive Order 12866 the Sitka Block proposed amendment must be analyzed as to whether it would be a "significant" action. As noted above, a "significant regulatory action" is defined as one likely to result in:

1. an annual effect on the economy of \$100 million or more;
2. an adverse effect in a material way on the economy, a sector of the economy, productivity, competition, jobs, the environment, public health, or safety, or State, local, or tribal governments or communities; or
3. a novel legal or policy issue.

The Supplemental Analysis indicated that the current IFQ plan would have an effect on costs, prices, competition, employment, investment, and productivity but that the plan was not expected to have an annual effect of over \$100 million. The Supplemental Analysis forecasted that the current IFQ program would produce a large increase in net economic benefits, but that predicted increase was also less than \$100 million per year.

An IFQ program with a Sitka Block amendment should still produce substantial net economic benefits relative to an open access fishery. Even if QS transferability was entirely eliminated, the in-season efficiency benefits of eliminating the derby-style fishery would be substantial. Costs associated with the "race for the fish" would still be greatly reduced.

Eliminating the "race for the fish" is also expected to improve public health and safety in these fisheries as fishermen will no longer be forced to fish during brief openings in poor weather. This will be true under the Sitka Block proposed amendment as it is true under the current IFQ program.

The Sitka Block proposal would also have effects on costs, prices, competition, employment, investment, and productivity. However, it is unlikely that such an amendment would result in annual effects of over \$100 million relative to the current plan. A Sitka Block proposed amendment should not have an adverse effect on State, local, tribal governments, or communities.

The Sitka Block proposal should not have an adverse effect on the environment. As discussed in Chapter 2.0, the modified block proposed amendment is not expected to have significant impacts under NEPA.

Many aspects of the current plan are preserved and large gains in net benefits should be generated relative to an open access fishery. Therefore, the Sitka Block proposal should not be considered "significant" under Executive Order 12866.

3.16 Summary of Economic Impacts: Distribution of Costs and Benefits

All of the Sitka Block proposed alternatives appear to reduce maximum potential consolidation relative to the current IFQ program. The "two-block" per area alternatives reduces maximum potential consolidation even more than the "three-block" per area alternatives. The presence or

absence of catcher boat size classes and concomitant inter-class transferability restrictions do not appear to have a large impact on maximum potential consolidation.⁴⁰

If actual consolidation under the alternatives is positively related to maximum potential consolidation, then it is likely there will be more fishing operations remaining under the Sitka Block proposal than there would be under the current IFQ plan. Moreover, there would be a wide range of block sizes and a large number of relatively small blocks. This would ensure that these fisheries would continue to support a diverse group of operations and could continue to support an entry level fishery.

Supporters of the Sitka Block proposed amendment feel that consolidation of QS holdings to a relatively small number of full-time fishing operations would be likely under the current IFQ program. They also feel that such a change would be too drastic, if it occurred, and could have a negative impact on the social structure and economies of some Alaska coastal communities. They see the Sitka Block proposal as a more "conservative" initial approach to an IFQ program which would serve to contain potential social and economic dislocations.

The cost of the "insurance" provided by a Sitka Block amendment may come in reduced net economic benefits to the nation. If the proposal prevents profitable consolidations which would otherwise occur, net economic benefits to the nation may be reduced. However, in some of the Sitka Block alternatives (2H, 3H, 5H, 6H, 8S, and 10S) catcher vessel size class transfer restrictions are reduced or eliminated. These alternatives might allow for some profitable exchanges which would not occur under the current plan.

It is likely that the transactions costs associated with QS transfers will increase under a Sitka Block amendment. Persons who want to alter their QS holdings in an area may have to find a block of appropriate size to purchase. They may also have to find a buyer for a block of a certain size which they need to sell to stay within the new constraint on block holdings. Thus altering QS holdings will be more difficult and costly than under the current plan. These increased transactions cost will also lower the net economic benefits to the nation generated by the IFQ program.

The Sitka Block amendment will also have effects on costs, prices, competition, employment, investment, and productivity. However, it is unlikely that the amendment would result in annual effects of over \$100 million relative to the current plan. Many aspects of the current plan are preserved and large gains in net benefits should be generated relative to an open access fishery. Therefore, the Sitka Block proposed rules should not be considered "significant" under Executive Order 12866.

⁴⁰ Again, as measured herein. The restrictions on transferability across vessel size classes may increase the difficulty of buyers and sellers finding appropriate size blocks. Thus the actual impact of such restrictions may be greater than the estimates herein suggest. Even if vessel size classes do not impact the overall degree of consolidation, the presence or absence of such restrictions may impact the distribution of blocks by catcher vessel size category.

4.0 INITIAL REGULATORY FLEXIBILITY ANALYSIS

The objective of the Regulatory Flexibility Act is to require consideration of the capacity of those affected by regulations to bear the direct and indirect costs of regulation. If an action will have a significant impact on a substantial number of small entities an Initial Regulatory Flexibility Analysis (IRFA) must be prepared to identify the need for the action, alternatives, potential costs and benefits of the action, the distribution of these impacts, and a determination of net benefits.

NMFS has defined all fish-harvesting or hatchery businesses that are independently owned and operated, not dominant in their field of operation, with annual receipts not in excess of \$2,000,000 as small businesses. In addition, seafood processors with 500 employees or less, wholesale industry members with 100 employees or less, not-for-profit enterprises, and government jurisdictions with a population of 50,000 or less are considered small entities. A "substantial number" of small entities would generally be 20% of the total universe of small entities affected by the regulation. A regulation would have a "significant impact" on these small entities if it resulted in a reduction in annual gross revenues by more than 5 percent, annual compliance costs that increased total costs of production by more than 5 percent, or compliance costs for small entities that are at least 10 percent higher than compliance costs as a percent of sales for large entities.

If an action is determined to affect a substantial number of small entities, the analysis must include:

- (1) description and estimate of the number of small entities and total number of entities in a particular affected sector, and total number of small entities affected; and
- (2) analysis of economic impact on small entities, including direct and indirect compliance costs, burden of completing paperwork or recordkeeping requirements, effect on the competitive position of small entities, effect on the small entity's cashflow and liquidity, and ability of small entities to remain in the market.

4.1 Economic Impact on Small Entities

The persons who will receive an initial allocation of QS under the IFQ program should be considered small entities under definitions in Chapter 4.0. Current estimates suggest that there are 5,484 persons eligible for halibut QS and 1,121 persons eligible for sablefish QS.

If adopted, none of the Sitka Block alternatives would impact the initial distribution of QS relative to the current plan. Nevertheless, the additional constraints under the Sitka Block alternatives are likely to change the opportunities for profitable consolidations of QS holdings for a substantial number of these persons, where substantial is defined in Chapter 4.0 above. In addition there are fish processing companies, support industries, and potential future entrants who may be directly or indirectly affected by a Sitka Block amendment.

The impacts of the Sitka Block alternatives on maximum potential consolidation were shown and discussed in detail in Sections 3.0 through 3.15. If actual consolidation is positively related to maximum potential consolidation it is likely that there would be more operations remaining in the fishery under a Sitka Block rule. While this may increase the total cost of the harvest and reduce the net economic benefits of the IFQ program, it may also result in slightly higher levels of harvesting employment than under the current IFQ plan.

Some small entities will find it more difficult to adjust their QS holdings for an area to achieve their desired level and some will not be able to achieve the same level of QS holdings that they would under the current IFQ plan. While the Sitka Block amendment should not significantly alter paperwork and recordkeeping requirements, the effort and transactions costs involved in transferring QS will likely be greater than under the current plan.

A Sitka Block rule would guarantee the continued existence of blocks containing relatively small amounts of QS. While it is unclear that it will be difficult to profitably purchase small amounts of QS under the status quo, supporters of the Sitka Block proposal want to guarantee that such blocks will always be available so that a diverse group of fishing operations can continue to participate in these fisheries.

Supporters of the Sitka Block proposal think that QS will tend to be consolidated into a relatively small number of full-time operations under the current plan. They feel that the most profitable use of QS will be in full-time operations, and these operations will be the ones which will be willing to pay the most for QS. Diverse operations (halibut or sablefish) fishing on a part-time basis, or small part-time and entry-level operations would be much less prevalent in these fisheries if they are correct.

The Sitka Block proposal seeks to ensure that a diverse group of operations can continue to profitably participate in these fisheries. By allocating QS in blocks and placing constraints on the number of blocks that can be held in an area, a Sitka Block amendment would guarantee the existence of a large number of small blocks which would be relatively unattractive to a full-time operation. In turn, the small blocks will insure that a diverse group of operations can continue to exist in these fisheries.

5.0 SUMMARY AND CONCLUSIONS

The Sitka Block Proposal was submitted by the Alaska Longline Fisherman's Association as a means to address concerns that the current IFQ plan for halibut and sablefish may result in a large consolidation of QS which could greatly reduce the current diversity of fishing operations in coastal communities. While small part-time operations could purchase any amount of QS under the current plan, Sitka Block proponents fear that the QS may be more valuable to larger, more full-time operations.

The Sitka Block amendment seeks to achieve some of the benefits of the IFQ program, while further constraining the program, with the goal of maintaining a relatively large and diverse group of fishing operations. Proponents think that if the current diversity of fishing operations is not maintained, the IFQ program may prove to be disruptive to the economies of Alaska coastal fishing communities.

The Sitka Block proposal seeks to maintain a large and diverse fleet by tying initial allocations of QS into blocks and restricting the number of blocks which a person can hold. The proposal would attach the QS permanently to a block. All permanent transfers of QS would have to be as a "unit" with the block.

The two exceptions to this provision are a rule which allows consolidation of very small blocks as long as they don't exceed a limit, and the division at initial issuance of QS which exceed a "maximum block size" into multiple blocks. These Sitka Block proposed constraints are intended to guarantee that there will be a wide range of block sizes permanently available in an area, each of which will be appropriate to different types of fishing operations. A large number of small blocks is also meant to guarantee the continued existence of a small boat and entry level fishery.

The Sitka Block alternatives were examined with respect to maximum potential consolidation. The additional constraints in the Sitka Block alternatives appear to reduce the maximum potential consolidation of QS relative to the current IFQ plan.

Sitka Block alternatives which allowed a person to accumulate only two blocks in an area reduced the estimates of maximum potential consolidation more than alternatives which allowed a person to accumulate up to three blocks in an area. In contrast, alternatives which included catcher vessel size categories and did not allow transfers across categories did not appear to substantially impact maximum potential consolidation. However, even if vessel size classes do not impact the degree of consolidation, the presence or absence of such restrictions may impact the distribution of blocks by catcher vessel category.

Which alternative will produce less actual consolidation of QS is unclear. Nevertheless, if actual consolidation is proportional to maximum potential consolidation (as estimated herein), the Sitka Block alternatives will result in a larger remaining number of fishing operations than will the current plan.

The Sitka Block proposed amendments would impact the net economic benefits generated by the IFQ program. To the extent that some profitable opportunities for consolidation of QS may be lost, the net economic benefits generated by the program may be reduced.

The proposed amendment will increase the search and transactions costs of persons who want to purchase or sell additional QS. Each block is unique and therefore it will be harder to find willing buyers or sellers with the exact amount of QS desired. Because of the limit on the number of blocks

a person can hold in an area, some persons may have to both buy and sell blocks of appropriate sizes in order to reach the new level of QS they want. This increase in fishermen's search and transactions costs will reduce the net economic benefits generated by the IFQ program.

The proposed changes may have impacts on administrative and enforcement costs as well as the tasks that will need to be performed to manage IFQs. The Sitka Block proposed amendment might complicate the initial allocation process. If more vessels remain in the fishery due to the amendment, the IFQ program may be more difficult to monitor and enforce. The need to monitor additional sets of constraints may also increase these costs.

Some aspects of the proposal may reduce the administrative and enforcement costs or release some resources to do a better job on other IFQ management tasks. For example, some of the original Sitka Block alternatives would eliminate catcher vessel length categories. If this occurred, NMFS would no longer have to be concerned about the actual size of a vessel during the initial allocation process, and would not have to monitor landings and landing records to make sure that a person's QS were being used on an appropriate size vessel.

The increased search and transactions costs associated with quota share transfers under the Sitka Block proposal may lead to a reduction in the volume of transfers per person. This may be offset somewhat if more persons remain in the fishery over time. If the proposal results in a reduction in the overall volume of transfers, NMFS may be able to redirect resources to work on other administrative or enforcement tasks, such as monitoring the larger number of operations or administering and enforcing the new Sitka Block constraints.

6.0 REFERENCES

Supplemental Analysis of the Individual Fishing Quota Management Alternative for Fixed Gear Sablefish and Halibut Fisheries. Gulf of Alaska and Bering Sea / Aleutian Islands. March 27, 1992. This report is called the Supplemental Analysis herein.

Discussion Draft Analyses of "The 1,000 Pound Minimum IFQ" Proposed Amendment to the Individual Fishing Quota Management Alternative for Alaska's Fixed Gear Halibut Fishery. October, 1992. This report is called the Discussion Draft herein.

Revised Supplement to the Draft Supplemental Environmental Impact Statement and Regulatory Impact Review / Initial Regulatory Flexibility Analysis to the Groundfish Fishery Management Plans for the Gulf of Alaska and the Bering Sea / Aleutian Islands. Longline and Pot Gear Sablefish Management. May 13, 1991

Draft for Public Review, Environmental Impact Statement/Regulatory Impact Review/Initial Regulatory Flexibility Analysis for Proposed Individual Fishing Quota Management Alternatives for the Halibut Fisheries in the Gulf of Alaska and Bering Sea/Aleutian Islands. July 19, 1991

Dalheim, M.E. 1988. Killer Whale (Orcinus orca) Depredation on Longline Catches of Sablefish (Anoplopoma fimbria) in Alaska Waters. U.S. Dept. Comm., NOAA/NMFS, NWAFC Processed Report 88-14.

Federal Register. 58(215):59375-59413. November 9, 1993.



7.0 AGENCIES AND INDIVIDUALS CONSULTED

Earl Krygier, Dave Benton, Dave Ackley
Alaska Department of Fish and Game
P.O. Box 25526
Juneau, AK 99802-5526

Joe Terry, Dave Colpo
Alaska Fisheries Science Center
National Marine Fisheries Service
7600 Sand Point Way N.E., Building 4
Seattle, WA 98115-0070

Jay Ginter, Sue Salvesson; Fisheries Management Division
Tamra L. Faris, Steven Zimmerman; Protected Resources Management Division
National Marine Fisheries Service
P.O. Box 21668
Juneau, AK 99802-1668

Marilyn Dalheim
Marine Mammal Laboratory
National Marine Fisheries Service
7600 Sand Point Way N.E., Building 4
Seattle, WA 98115

Marcus Hartley, Chris Oliver
North Pacific Fishery Management Council
P.O. Box 103136
Anchorage, AK 99510

David Flannagan
Office of Enforcement
National Marine Fisheries Service
P.O. Box 21668
Juneau, AK 99802-1168

Linda Behnken, Dan Falvey
Alaska Longline Fishermen's Association
P.O. Box 1229
Sitka, AK 99835

Ron Hegge
14235 Hancock Drive
Anchorage, AK 99515-3961

Bruce Turris
Halibut and Sablefish Coordination
Government of Canada
Department of Fisheries and Oceans
Economics and Statistics Branch
1090 West Pender Street
Vancouver, BC VGE ZP1

8.0 LIST OF PREPARERS

Kurt Schelle, Kurt Iverson, and Ben Muse
Alaska Commercial Fisheries Entry Commission
8800 Glacier Highway, #109
Juneau, Alaska 99801

Sally Bibb
National Marine Fisheries Service
P.O. Box 21668
Juneau, Alaska 99802-1668

Portions of this document are borrowed from previous analysis documents which relied heavily on contributions from other authors.

Data bases used in this analysis were supplied by:

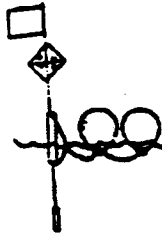
National Marine Fisheries Service
Alaska Fisheries Science Center
7600 Sand Point Way N.E., Building 4
Seattle, Washington 98115



APPENDIX I

Proposed Amendment to the IFQ Plan: Quota Share/License Program for Catcher Vessel Classes





Alaska Longline Fishermen's Assoc.

P.O. Box 1229 Sitka, AK 99835 (907) 747-3400

Dear Reader,

Along with the rest of the State, the Alaska Longline Fishermen's Association (ALFA) is concerned about the impact of Individual Fishing Quotas (IFQ) on the small boat longline fleet and the Alaska coastal communities. We are also concerned about the future of the resource, the fisheries, and the communities under the current open access system and under the management systems proposed as alternatives to IFQs. For these reasons, ALFA is advocating amendment of the halibut and sablefish IFQ plan to include what has become known as the Sitka Block Proposal. The Sitka Block Proposal provides protection to the small boat fleet and the Alaska coastal communities; it also ensures that the longline fisheries will remain accessible to small, independent operators since small quota "blocks," under this system, will remain affordable. Enclosed please find information on the Sitka Block Proposal; this information is intended for distribution and/or publication.

Please contact me at the number above if I can provide any additional information. Thank you for your time and attention.

Sincerely,

Linda Behnken
(exec. director, ALFA)



Dear *Reader*,

In response to continued concern regarding the impact of IFQs on the small boat fleet and the Alaska coastal communities, members of the Sitka fishing community have developed an amendment to the sablefish and halibut IFQ plan currently before the Council.

This amendment, called the Sitka Block Proposal, provides protection to the resource without jeopardizing the future of the small boat fleet or coastal communities. The Proposal achieves the same fleet diversity--from skiffs to schooners--that led to the inclusion of vessel size classes in the current IFQ plan, but does so more simply and more effectively. The Block Proposal provides an entry level fishery, ensuring that no one will be "shut out;" it also reduces consolidation, thus maintaining a relatively large, diverse fleet and protecting the socioeconomic health of the Alaska coastal communities. In sum, it responds to the valid concerns raised by concerned Alaskans. Here's how it works:

The Sitka Block Proposal permanently attaches each initially allocated quota share to a license, which then becomes a "block." No person may own or control more than three quota share blocks per area per year, and no more than five blocks may be used on any one vessel per area per year. As the North Pacific Fishery Management Council's IFQ analysis indicates, there will be an abundance of relatively small blocks in the initial allocation, a moderate amount of medium sized blocks, and very few big blocks. To illustrate: in the halibut fishery 62% of the initially allocated blocks will be 3,000 lbs or less while only 5% will be greater than 30,000 lbs; in the sablefish fishery 35% of the blocks will be 3,000 lbs or less, 54% will be 10,000 lbs or less, and only 23% will be greater than 30,000 lbs. Since the blocks can not be combined and each person is limited to no more than three blocks, the owners of large vessels will bid against each other for the large blocks, leaving the small blocks for small operators, new entrants, and deckhands. Predictably, the small blocks will sell for less per pound than the big blocks, hence the longline fisheries will remain accessible to the skiff fishermen, the troller/longliner, and the newcomer. Since at any given time a number of people will have one or two blocks, the fleet will remain relatively large and diverse--very much like the fleet of today. And because the fleet will remain large and diverse, traditional delivery patterns (i.e., shore-side deliveries in the small coastal communities) can be expected to continue.

The Sitka Block Proposal also ensures a greater availability of quota blocks, since a person holding three blocks must sell one in order to

increase his or her holdings. In other words, the specter of 100 or 200 boats amassing quota until there is no quota left to amass is eliminated with this amendment. Quota blocks will come on the market as fishermen adjust their quota share holdings to suit their operation. Again, this will provide an entry level fishery and maintain fleet diversity.

Allowing more licenses per vessel than are allowed per person is in response to the deckhands' concerns about their future in the fisheries. Under the Sitka Block Proposal, the deckhand who invests in a quota block will be in high demand among skippers that already hold three blocks but wish to increase their vessels' level of harvest. Skippers with three blocks will not be allowed to buy more, so they will look for deckhands with blocks. Again, the abundance of small blocks will provide an opportunity for deckhands to purchase blocks at an affordable price which, in turn, will assure them of a job--or entry into the fishery as a vessel owner.

At this point everyone agrees that the open access derbies can not continue. What we haven't been able to agree on is the replacement. We feel that the Sitka Block Proposal provides that replacement, and would like it to be analyzed and addressed by the Council. For that to happen, the Proposal needs broad-based support. The support is rapidly growing in Sitka; it is our hope that the same will happen in other communities. If you like this amendment and/or want more information about it, please call the ALFA office at 747-3400. We are eager to hear your thoughts.

Thank you for your time and attention.

Sincerely,



Linda Behnken

Since a lot of people will receive initial allocations, or blocks, of 100, 300, and even 10 pounds, we have proposed allowing people to combine two or more blocks into one as long as the total of the combined blocks does not exceed 1,000 pounds in the halibut fishery or 3000 pounds in the sablefish fishery.

**PROPOSED AMENDMENT
TO IFQ PLAN:
SITKA BLOCK PROPOSAL
QUOTA SHARE/LICENSE
PROGRAM FOR CATCHER BOAT CLASS**

This amendment to the sablefish and halibut IFQ plan is proposed in response to continued concern regarding the socioeconomic impacts of IFQs on coastal communities and the small boat fleet. The amendment preserves the nature of the fleet to the maximum extent possible, while providing the sablefish and halibut resource with much needed protection.

Under the proposed amendment, initial quota share allocations will be attached to a specific license. The amount of the initial quota share allocation will be determined as per criteria specified in the current preferred alternative. Subsequent quota transfers must include transfer of the quota share license (QSL) and all quota shares attached to that license. A persons' total holdings will be restricted by caps specified in the preferred alternative, and include all existing "grandfather" exemptions. Each person may land fish on no more than three licenses per area per year. No more than five licenses may be used on any vessel per area per year.

These provisions will:

1. Ensure the continued existence of a relatively large, diverse fleet.
2. Provide protection to coastal communities. Because small boats tend to be locally based, traditional delivery patterns will continue.
3. Provide an entry level fishery accessible to deckhands and other small, independent operators. The abundance of small quota share "blocks" will reduce the relative cost per pound of these licenses.
4. Simplify implementation, monitoring, and enforcement by eliminating the need for vessel size classes and significantly reduce the number of discreet quota share blocks that may be bought or sold.

By responding to the frequently voiced objections and concerns raised by industry and community members, the proposed amendment has significantly increased the support base for IFQs in southeast Alaska; predictably it will do the same statewide.

(1)

LANGUAGE CHANGES / ADDITIONS TO PREFERRED ALTERNATIVE

Sec 2 (B) : [Initial QS assignment]

- (i) Initial QS allocations for each area shall be permanently attached to a license.
- (ii) In the initial allocation, the IFQs arising from a quota share license (QSL) shall not exceed 1/2 of the specified ownership cap.
- (iii) Those individuals or persons receiving initial allocation in excess of the cap in a management area shall be issued the number of QSLs equal to his/her allocation.
- (iv) QSL shall remain as single licenses and may only be sold or transferred in their entirety unless QSL are combined pursuant to Sec 2 (D) (iv). Portions of the QSL may be leased in accordance with Sec 2 (c) (2) (iii).
- (v) All sales of transfers of QSL shall be free and clear of all control, fiduciary trust and/or future contract.

Sec 2 (C) (2) - Delete (ii) (iii)

Sec 2 (D) [Ownership Caps]

- add (iii) For sablefish and halibut any individual or person not grandfathered under Sec 2 (B) (1) (C) may not utilize the IFQs from more than three QSL in a management area in any one year. In the event of sale or transfer of QSL, a person or individual may hold up to 4 QSL for a period of no longer than one hundred and twenty days.
- add (iv) QSL which have yearly IFQ's amounting to less than 1000 pounds for halibut and 3000 pounds for sablefish may be consolidated by an individual or person into a single permanent QSL as long as the resultant QSL does not exceed 1000 pounds for halibut or 3000 pounds for sablefish.
- add (vi) For sablefish and halibut: IFQs from no more than 5 QSLs may be utilized on any one vessel per area per year. *[option: 4 QSLs per vessel per area per year]*

(2)

APPENDIX II

Memo from Joe Terry to Jay Ginter, Sitka Block IFQ Proposal



TO: Jay Ginter
FROM: Joe Terry
SUBJECT: Sitka Block IFQ Proposal

Main Points of the Proposal

1. With two exceptions, the initial QS of each person by area will be a QS block that will retain its size and identity for the life of the IFQ program.
2. One exception is that, because no QS block may be more than one half of the ownership cap, a block that exceeds this limit will be subdivided such that none of the resulting blocks exceeds the limit. Each resulting block will retain its size and identity for the life of the IFQ program.
3. The other exception is that blocks can be combined to form a new block of up to 1,000 lbs for halibut or up to 3,000 lbs for sablefish.
4. During a year, no person may own more than three QS blocks for an area. The exception is that a fourth block can be owned, but not used, for a 120-day period.
5. During a year, no person may use the IFQs from more than three QS blocks for an area.
6. During a year, no vessel may use the IFQs from more than five QS blocks for an area.
7. The catcher boat vessel size categories would be eliminated.
8. It is not clear whether the distinction between catcher boats and freezer boats would be eliminated or whether other restrictions on ownership and use of QSs and IFQs would be eliminated.

Proponents' Assertions

1. The proposal provides protection to the small boat fleet and the coastal communities; it also ensures that the longline fisheries will remain accessible to small, independent operators; i.e., small quota blocks, under this system, will remain affordable.
2. The proposal achieves the same fleet diversity -- from skiffs to schooners -- that lead to the inclusion of vessel size classes in the current IFQ plan, but it does so more simply and more effectively.

3. Owners of large vessels will bid against each other for large blocks, leaving the small blocks for small operators, new entrants, and deckhands.
4. ... the fleet will remain large and diverse -- very much like the fleet of today. And because the fleet will remain large and diverse, traditional landing patterns (i.e., shore-side deliveries in small coastal communities can be expected to continue.

Responses to the Main Points of the Proposal

1. The restriction that no block exceed one half of the ownership limit will be difficult to implement because the blocks are by management area but, with the exception of Southeast, the ownership limits are for groups of management areas. It is not clear whether the intent is to use the area wide limits or management area specific limits.
2. There is an equity problem if the blocks that are split to remain under these limits are not split in a way determined individually by each such QS recipient. For example, if the QS block size limit is 0.5% of the total QSs of an area, a person who qualified for 1% of the total QSs would receive two blocks each of 0.5%, but if blocks are subdivided into equal sizes, a person who qualified for 1.0001 % of the total QSs would receive three blocks each of about 0.333%. If there is a price premium for larger blocks, the former QS recipient would be given blocks that are in total more valuable.
3. Emergency transfers are not addressed. If they are not allowed for as an exemption to how many blocks a person or vessel can fish, an illness or the loss of a vessel could prevent some blocks from being used fully.
4. The ability to combine blocks up to 1,000 lbs or 3,000 lbs, respectively, for halibut and sablefish is complicated by the fact that IFQs but not QSs are in terms of annual catch. This problem can be solved by saying that blocks can be combined up to 1,000 lbs or 3,000 lbs based on 1992 TACs.

Responses to Proponents' Claims

1. The proposal will clearly increase the minimum number of QS owners and vessels that may be involved in taking the TACs (see attached tables).
2. Although the price of a small block will be less than that of a large block, the price per pound will not necessarily be less for small blocks. The demand and supply for each type of block will determine the price per pound of each block size. For example, the demand for small halibut

blocks by salmon trollers to cover their bycatch and by fishermen who cover their fixed costs in other fisheries may be sufficiently high that the price per pound will be higher for small blocks. If smaller blocks will cost less due to their size but not due to a lower price per pound, no advantage is provided because, with the Council's program, QSs can be purchased in very small to very large increments.

3. It is not clear that the proposal provides more protection for small vessels from large vessels. With the vessel classes of the Council's proposal, there is absolute protection provided among the vessel classes but no protection within a vessel class. The proposal would eliminate the absolute protection. Therefore, the protection would not necessarily be more effective with the proposal.
4. The proposal does not result in a simpler method of protection. The need to monitor blocks would add to the administrative and enforcement complexity of IFQs. The increased transaction costs associated with blocks would impose costs on those who bought and sold QS. The market would be fragmented, perhaps with different prices per pound for different sized blocks. To increase his annual catch by 10,000 lbs, a fisherman would have to find someone who wanted to sell a block that was 10,000 lbs more than one of his blocks and also find someone who wanted to buy a block of the size he has to give up.
5. The rule that no more than 5 blocks can be used on a vessel will make deckhands with small blocks much less welcomed on a vessel than with the Council's proposal. With the proposal, a vessel that wants to maximize its catch would not use a deckhand with a small block.
6. It is not clear that the ability of Alaska coastal communities to compete with other ports for halibut and sablefish landings will be affected adversely by the Council's IFQ program; therefore, it is not clear that proposal eliminates an actual problem for these communities.
7. With the proposal, a fisherman who wants to participate in the IFQ fisheries during much of the year will have to fish in many areas instead of being able to concentrate his effort in a management area of his choice. This will tend to increase his operating costs, decrease his ability to deliver to a local processor, and result in a more transient and, perhaps, less safe fishery.
8. If the demand and supply for different sized blocks are such that the price per pound is higher for small blocks, the proposal would further disadvantage the group it is intended to help. The inability of this group to use large blocks is one factor that would tend to increase the price per pound

of small blocks and decrease that of large blocks.

9. For the purposes of the halibut harvesting cost model it was assumed that the trip capacity was 10,000 lbs, 20,000 lbs, and 50,000 lbs, respectively, for vessel up to 35 feet, vessels between 35 and 60 feet, and vessels between 60 and 90 feet. This means that even a small boat would have to have relatively large blocks to make a small number of trips in one management area.
10. The proposal will substantially reduce the benefits provided by the limited ability to buy IFQs (rent QSS).
11. The decreased ability to make marginal adjustments in IFQs could increase discards and unreported catch and increase the probability that the TACs will not be utilized fully.

PART II

DRAFT FOR SECRETARIAL REVIEW

**ENVIRONMENTAL ASSESSMENT
AND
REGULATORY IMPACT REVIEW/INITIAL REGULATORY FLEXIBILITY ANALYSIS
FOR THE
"FULL/PARTIAL BLOCK" PROPOSED AMENDMENT
TO THE INDIVIDUAL FISHING QUOTA MANAGEMENT ALTERNATIVE
FOR ALASKA'S FIXED GEAR HALIBUT AND SABLEFISH FISHERIES**

Prepared by:
Alaska Commercial Fisheries Entry Commission
National Marine Fisheries Service

May 25, 1994



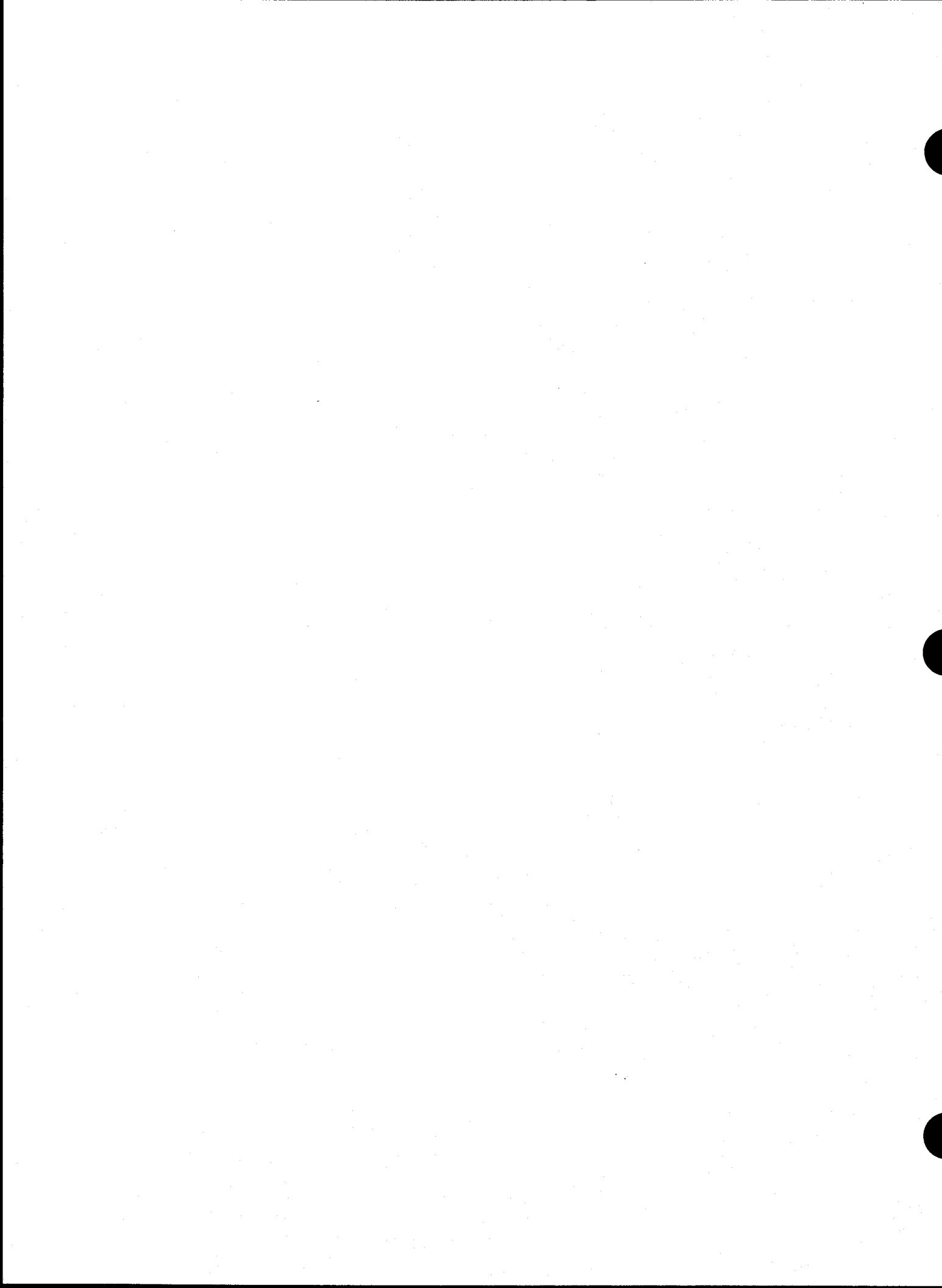
TABLE OF CONTENTS

1.0	INTRODUCTION	123
1.1	Purpose of this Document	123
1.2	The Council's Authority to Take Action	123
1.3	History of the Issue	124
1.4	Alternatives Considered	127
1.4.1	Alternative 1: Status Quo	127
1.4.2	Full/Partial Block Alternatives	127
2.0	ENVIRONMENTAL IMPACTS OF THE ALTERNATIVES	129
2.1	NEPA Consistency	129
2.2	Effects on Marine Mammals	129
2.3	Endangered Species Act	130
2.4	Coastal Zone Management Act	132
2.5	NEPA Finding of No Significant Impact	133
3.0	REGULATORY IMPACT REVIEW: ECONOMIC IMPACTS	135
3.1	Introduction	135
3.1.1	Consolidation Within a Management Area	136
3.1.2	GOA and BSAI Aggregate Consolidation	138
3.2	Halibut	138
3.2.1	Alt 1: Status Quo	138
3.2.2	Alt 2: One Catcher Size Class, Two Partials	141
3.2.3	Alt 3: One Catcher Size Class, Three Partials	144
3.2.4	Alt 4: Two Catcher Size Classes, Two Partials	147
3.2.5	Alt 5: Two Catcher Size Classes, Three Partials	150
3.2.6	Alt 6: Three Catcher Size Classes, Two Partials	153
3.2.7	Alt 7: Three Catcher Size Classes, Three Partials	156
3.3	Sablefish	159
3.3.1	Alt 1: Status Quo	159
3.3.2	Alt 2: One Catcher Size Class; Two Partials	161
3.3.3	Alt 3: One Catcher Size Class; Three Partials	164
3.3.4	Alt 4: Two Catcher Size Classes; Two Partials	167
3.3.5	Alt 5: Two Catcher Size Classes; Three Partials	170
3.4	Costs, Benefits, and Distributional Impacts	173
3.4.1	Administrative Costs and Benefits	173
3.4.2	Search and Transaction Costs	174
3.4.3	Fish Harvesting Costs	176
3.4.4	Distributional Consequences	177
3.4.5	Executive Order 12866	178
4.0	INITIAL REGULATORY FLEXIBILITY ANALYSIS	181
5.0	SUMMARY AND CONCLUSIONS	183
5.1	Halibut results	183
5.2	Sablefish results	183

6.0	REFERENCES	185
7.0	AGENCIES AND INDIVIDUALS CONSULTED	187
8.0	LIST OF PREPARERS	189
9.0	APPENDIX I: ORIGINAL FULL/PARTIAL BLOCK PROPOSAL	191
10.0	APPENDIX II: 10,000 POUND FULL BLOCKS	193

LIST OF TABLES

Table 3.2.1-1.	Binding Area IFQ Limits for Halibut	140
Table 3.2.1-2.	Possible Minimum Number of Halibut Status Quo QS Holders	140
Table 3.2.2-1.	Alternative 2: Halibut Partial Block Analysis	142
Table 3.2.2-2.	Alternative 2: Halibut Full Block Analysis	143
Table 3.2.3-1.	Alternative 3: Halibut Partial Block Analysis	145
Table 3.2.3-2.	Alternative 3: Halibut Full Block Analysis	146
Table 3.2.4-1.	Alternative 4: Halibut Partial Block Analysis	148
Table 3.2.4-2.	Alternative 4: Halibut Full Block Analysis	149
Table 3.2.5-1.	Alternative 5: Halibut Partial Block Analysis	151
Table 3.2.5-2.	Alternative 5: Halibut Full Block Analysis	152
Table 3.2.6-1.	Alternative 6: Halibut Partial Block Analysis	154
Table 3.2.6-2.	Alternative 6: Halibut Full Block Analysis	155
Table 3.2.7-1.	Alternative 7: Halibut Partial Block Analysis	157
Table 3.2.7-2.	Alternative 7: Halibut Full Block Analysis	158
Table 3.3.1-1.	Binding Area IFQ Limits for Sablefish	160
Table 3.3.1-2.	Possible Minimum Number of Sablefish Status Quo QS Holders	160
Table 3.3.2-1.	Alternative 2: Sablefish Partial Block Analysis	162
Table 3.3.2-2.	Alternative 2: Sablefish Full Block Analysis	163
Table 3.3.3-1.	Alternative 3: Sablefish Partial Block Analysis	165
Table 3.3.3-2.	Alternative 3: Sablefish Full Block Analysis	166
Table 3.3.4-1.	Alternative 4: Sablefish Partial Block Analysis	168
Table 3.3.4-2.	Alternative 4: Sablefish Full Block Analysis	169
Table 3.3.5-1.	Alternative 5: Sablefish Partial Block Analysis	171
Table 3.3.5-2.	Alternative 5: Sablefish Full Block Analysis	172
Table 5.1-1.	Maximum Possible Halibut Consolidation	183
Table 5.2-1.	Maximum Possible Sablefish Consolidation	184
Table A2-1.	Total Halibut Block Holders by Area	195
Table A2-2.	Total Sablefish Block Holders by Area	195
Table A2-3.	Alternative 8: Halibut Partial Block Analysis	196
Table A2-4.	Alternative 8: Halibut Full Block Analysis	197
Table A2-5.	Alternative 9: Halibut Partial Block Analysis	198
Table A2-6.	Alternative 9: Halibut Full Block Analysis	199
Table A2-7.	Alternative 8: Sablefish Partial Block Analysis	200
Table A2-8.	Alternative 8: Sablefish Full Block Analysis	201
Table A2-9.	Alternative 9: Sablefish Partial Block Analysis	202
Table A2-10.	Alternative 9: Sablefish Full Block Analysis	203



1.0 INTRODUCTION

1.1 Purpose of this Document

In December 1991 the North Pacific Fishery Management Council (Council) recommended an Individual Fishing Quota (IFQ) program for management of the fixed gear sablefish and halibut fisheries off of Alaska. In April 1992 the Council voted not to reconsider its decision. However, at its April meeting the Council requested an analysis of a possible amendment to its plan, called the Sitka Block amendment, that would modify certain aspects of the operation of the quota share (QS) market and impose new limits on the extent to which persons could accumulate QS. At its June 1992 meeting the Council also requested analysis of an alternative block plan, the Full/Partial Block proposal. The block proposals were motivated by concerns over the possible aggregation of QS in relatively few hands, and consequent social impacts on the fishery and dependent communities.

The Council was given a preliminary analysis of several Sitka and Full/Partial Block proposal alternatives at its September 1992 meeting. These were released for public review in October.¹ At its January 1993 meeting the Council requested preparation of a draft "Environmental Assessment/Regulatory Impact Review/Initial Regulatory Flexibility Analysis" (EA/RIR/IRFA) of the Sitka and Full/Partial Block proposals for presentation at its June 1993 meeting in Kodiak.

An EA/RIR/IRFA is needed because actions taken to amend Fishery Management Plans or implement other regulations governing the groundfish fisheries and actions taken by the Secretary to implement regulations governing the halibut fishery must meet the requirements of Federal laws and regulations. Among the most important of these are the National Environmental Policy Act (NEPA), the Endangered Species Act (ESA), the Marine Mammal Protection Act (MMPA), Executive Order (E.O.) 12866, and the Regulatory Flexibility Act (RFA).

This document, the EA/RIR/IRFA requested by the Council in January 1993, addresses these statutory requirements. NEPA, E.O. 12866, and the RFA require a description of the purpose and need for the proposed action as well as a description of alternative actions which may address the problem. This information is included in Chapter 1 of this document. Chapter 2 contains information on the biological and environmental impacts as required by NEPA. Impacts on endangered species and marine mammals are also addressed in this chapter. Chapter 3 contains a Regulatory Impact Review (RIR) which addresses the requirements of both E.O. 12866 and the RFA that economic impacts of the alternatives be considered. Chapter 4 discusses the RFA's Initial Regulatory Flexibility Analysis (IRFA) requirements.

1.2 The Council's Authority to Take Action

The groundfish fisheries in the Exclusive Economic Zone (EEZ) (3 to 200 miles offshore) of the Gulf of Alaska (GOA) and Bering Sea/Aleutian Islands Area (BSAI) are managed under the Fishery Management Plan (FMP) for the Groundfish Fisheries of the Gulf of Alaska and the FMP for the Groundfish Fisheries of the Bering Sea/Aleutian Islands Area. Both FMPs were developed by the North Pacific Fishery Management Council (Council) under the Magnuson Fishery Conservation and Management Act (Magnuson Act). The GOA FMP was approved by the Secretary of Commerce and became effective in 1978 and the BSAI FMP became effective in 1982.

¹See Analyses of "The Sitka Block" Proposed Amendment and "The Full/Partial Block" Proposed Amendment to the Individual Fishing Quota Management Alternative for Fixed Gear Sablefish and Halibut Fisheries. Gulf of Alaska and Bering Sea/Aleutian Islands. Discussion Draft. October 20, 1992.

The domestic fishery for halibut in and off of Alaska is managed by the International Pacific Halibut Commission (IPHC) as provided by the Convention between the United States and Canada for the Preservation of the Halibut Fishery of the Northern Pacific Ocean and the Bering Sea (Convention), signed in 1979, and the Northern Pacific Halibut Act of 1982.

While the IPHC has the primary authority for managing the halibut resource for biological conservation purposes, the Halibut Act authorizes the appropriate Regional Fishery Management Councils established by the Magnuson Act to develop regulations that are in addition to, but not in conflict with, regulations adopted by the IPHC affecting the U.S. halibut fishery. Under this authority, the North Pacific Fishery Management Council (Council) may develop, for approval by the Secretary of Commerce (Secretary), limited access regulations for the Pacific halibut fishery in Convention waters in and off of the State of Alaska that are consistent with criteria set forth in Section 303(b)(6) of the Magnuson Act. The Council does not, however, have an FMP for halibut.

1.3 History of the Issue

As noted earlier, in December 1991 the Council recommended an IFQ program for management of the fixed gear sablefish and halibut fisheries off Alaska. For purposes of this action, the Council defined "fixed gear" to include all hook and line fishing gears (longlines, jigs, handlines, troll gear, and etc.) in the Gulf of Alaska (GOA) and Bering Sea/Aleutian Islands (BSAI) Areas and pot gear for sablefish in the BSAI.

In April 1992 after conducting a further analysis of the alternatives,² the Council rejected a motion to rescind its earlier vote and directed that the IFQ plan amendment package be forwarded to the Secretary of Commerce. In January 1993 the Secretary of Commerce approved the IFQ management program.

Although the plan included provisions designed to protect the social structure of the fishery and dependent communities,³ many persons remained concerned that the plan did not guarantee that enough QS would continue to be held by small part-time operators. These persons were concerned about the social impacts of the reduction in size or total elimination of such operations.

When it met in April 1992 the Council responded to these concerns and directed staff to analyze the Sitka Block proposal which had been submitted by the Alaska Longline Fisherman's Association (ALFA). The Sitka Block proposal seeks to achieve some of the benefits of the current plan while further constraining the IFQs in the hopes of maintaining a relatively large and diverse group of fishing operations. The Sitka Block proposal ties initial allocations of QS into blocks and restricts the number of blocks a person can hold. All permanent transfers of QS would have to be as a block.

Full/Partial Blocks were first proposed by NPFMC Council member Ron Hegge in a May 1992 letter to Council Chairman Richard Lauber.⁴ Mr. Hegge proposed to give fishermen full and partial blocks of QS. Fishermen could accumulate different combinations of these blocks subject to the

²See Supplemental Analysis of the Individual Fishing quota Management Alternative for Fixed Gear Sablefish and Halibut Fisheries - Gulf of Alaska and Bering Sea/Aleutian Islands (March 27, 1992). For brevity, this document will be referred to as Supplemental Analysis in the remainder of this report.

³Such as three catcher vessel size classes for halibut vessels and limits on the amount of quota any one person may hold.

⁴A copy of this letter is attached in Appendix I.

existing aggregation limits, and subject to new limits on the numbers of partial blocks that may be held.

Under the Full/Partial Block proposal, QS would be based on each eligible applicant's qualifying pounds, as under the current Council plan. Each person's QS, however, would be issued as one or more blocks. A block of QS may not be broken up. QS in a block may not be sold separately from other QS in the block. The proposal called for two types of blocks, full blocks and partial blocks.

In Mr. Hegge's original plan, a full block of QS would contain enough shares to give the recipient 10,000 pounds of IFQ in the first year of the program.⁵ Full blocks were to be issued to persons who got QS worth more than 10,000 pounds of IFQ. The number of full blocks to be issued was to be determined by dividing the amount of IFQ the person got by 10,000. Partial blocks would vary in size, but contain QS equivalent to less than 10,000 pounds of IFQ in the first year of the program. Partial blocks were to be issued to persons who didn't have enough shares for a full block, or to persons whose total allocation of IFQ, while containing one or more full blocks, was not exactly divisible by 10,000. As a practical matter, every eligible applicant would get a partial block in the initial allocation.⁶

For example, if a person had 5,000 pounds of IFQ, they would receive one partial block with QS equivalent to 5,000 pounds of IFQ. If a person had 12,000 pounds of IFQ they would receive one full block of 10,000 pounds and a partial block of 2,000 pounds. If a person had 27,000 pounds of IFQ they would receive two 10,000 pound full blocks and one partial block of 7,000 pounds.

Blocks could be transferred. A person could own or control any number of full blocks in a management area, and one partial block in that area, so long as the total QS holdings did not exceed the aggregation limits in the plan. In the original Full/Partial Block proposal, a person who did not own any full blocks could own or control up to three partial blocks in a management area (again subject to the existing plan's aggregation limits).⁷ The only restrictions on holding blocks in multiple areas were the aggregation limits in the existing plan.

Mr. Hegge's original Full/Partial Block proposal eliminated the catcher vessel size classes in the management plan. The plan requires that halibut QS be issued separately for vessels less than or equal to 35 feet, 36 to 60 feet, and above 60 feet. They require that sablefish QS be issued separately for vessels less than or equal to 60 feet and vessels greater than 60 feet. The proposal retained the catcher vessel-freezer vessel distinction in the plan. The current plan prohibits the transfer of QS between vessel classes.⁸

⁵Note that in this draft EA/RIR/IRFA the full block size has been changed to 20,000 pounds. The amount of IFQ in a block might vary in subsequent years as TACs change. The number of quota shares in a block would not change.

⁶A person would not receive a partial block if the IFQ allocation was an exact multiple of 10,000, such as 20,000 or 100,000.

⁷Different alternatives analyzed in this report allow persons without full blocks to hold as many as two or as many as three partial blocks. In addition, the two partial block alternatives allow as many as four partial blocks to be fished off of one vessel in a year. The three partial block alternatives allow as many as five partial blocks to be fished off a vessel.

⁸This EA/RIR/IRFA looks at halibut blocks when there are one, two or three catcher vessel size classes, and at sablefish blocks when there are one or two size classes.

The Full/Partial Block proposal was designed to address problems that some saw the plan posing for small operators, crewmen, and coastal communities, while minimizing new difficulties the Sitka Block proposal might have created for large operators. As Hegge stated in his letter on the Full/Partial Block proposal:

Clearly there is significant opposition to the IFQ plan adopted by the Council. The greatest opposition comes from small vessel operators, crewmen, and communities, all of whom feel the IFQs would be bought up by large operators, which would eliminate future opportunity for those entering the fisheries and a loss of employment opportunities.

The Sitka block (SB) proposal addresses some of these problems but also creates additional management difficulties. The SB proposal has certainly created opposition among the medium and large operators.

I feel the proposal I have outlined presents a compromise that gives all of the protection of a block program for new entrants and small vessels while not unduly restricting the larger participants. Removal of the vessel size classes eliminates an expensive and now unnecessary restriction.

The Full/Partial Block proposal was introduced to the North Pacific Fishery Management Council at the June 1992 meeting. The Council requested that a preliminary analysis of this proposal be prepared for their September meeting. Due to other commitments, NPFMC and NMFS staff could not conduct the analysis. Because of the importance of the issue to the State of Alaska, the State of Alaska's representative agreed to have the State conduct the analysis.

A Discussion Draft was presented to the Council at the September 1992 meeting. The draft examined the following variants of the full/partial block plan:

full block sizes equal to 10,000 and 30,000 pounds of IFQ,

allowing partial block holders to have two or three partial blocks, and

eliminating catcher vessel size classes, or retaining size classes greater or less than 60 feet.

The Council approved the discussion draft for public review and comment at its September meeting and the draft was distributed to the public in October.

At its January 1993 meeting the Council directed staff to proceed to prepare a draft EA/RIR/IRFA for the June 1993 Council meeting in Kodiak. At this time the Council requested the incorporation of a "sweeping up" provision in the plan similar to one contained in the Sitka Block proposal and directed staff to narrow its focus to a plan with 20,000 pound full blocks.

1.4 Alternatives Considered

1.4.1 Alternative 1: Status Quo

The status quo is the IFQ program as approved by the Secretary in December 1991. Under this plan each person in the fishery would hold QS. Each QS entitles the holder to harvest a small percentage of the annual TAC. The pounds of fish from the annual TAC to which the person is entitled are called the person's IFQ. The IFQ associated with any QS will vary from year to year as the fishery TAC varies.

In the status quo the QS may be bought and sold individually, subject to certain constraints. QS are issued separately for each management area and vessel class. The plan creates four halibut vessel classes (catcher vessels less than or equal to 35 feet, catcher vessels 36 to 60 feet, catcher vessels over 60 feet, and freezer vessels) and three sablefish vessel classes (catcher vessels less than or equal to 60 feet, catcher vessels over 60 feet, and freezer vessels). There are limits on the amounts of QS that may be held by one person or fished off of one fishing vessel during a year.

The plan is described and analyzed in detail in the Supplemental Analysis of March 27, 1992. The status quo options for halibut and for sablefish will be referred to as Alternative 1.

1.4.2 Full/Partial Block Alternatives

The Full/Partial Block alternatives would change the status quo by adding a "sweep up" provision, and one of several variants of the Full/Partial Block proposal.

Each person is issued the same number of QS that they would receive under the status quo. However, each person's QS are issued in full and partial blocks. In response to the Council's request in January 1993, full blocks are defined to contain enough QS to give the recipient 20,000 pounds of IFQ in the first year of the program.⁹ A partial block contains fewer QS than a full block. A partial block will not have enough QS to give the recipient 20,000 pounds of IFQ in the first year of the program.

The definition and allocation of full and partial blocks can be best shown with examples. A person who gets enough QS to get 5,000 pounds of IFQ in the first year of the program will get a partial block containing those QS. A person who gets enough QS to get 45,000 pounds of IFQ in the first year of the program will get two full blocks, each containing enough QS to give the holder 20,000 pounds of IFQ, and a partial block with enough QS to give the holder 5,000 pounds of IFQ.

At its January 1993 meeting the Council requested that a "sweep up" provision be added to the original version of the Full/Partial Block proposal. This allows persons who receive QS that entitle them to less than 1,000 pounds of halibut IFQ, or less than 3,000 pounds of sablefish IFQ, in the first year of the program, to combine their allocations into new partial blocks that would be less than or equal to 1,000 pounds of halibut IFQ or less than or equal to 3,000 pounds of sablefish IFQ. The

⁹The original Full/Partial Block proposal had 10,000 pound full blocks. At its January 1993 meeting the Council requested an analysis of 20,000 pound full blocks. Appendix II to this part of the EA/RIR/IRFA contains results for two 10,000 pound full block halibut and sablefish alternatives.

partial blocks created in the "sweeping up" process are permanent and cannot be changed thereafter.¹⁰

The full/partial block alternatives examined all have 20,000 pound full blocks. They differ with respect to the numbers of partial blocks a person without full blocks may hold, with respect to the number of partial blocks that may be fished off of a single vessel, and with respect to the number of catcher vessel size classes that are imposed. The alternatives are:

- Alt 2: One catcher vessel size class; persons who don't hold full blocks may hold up to two partial blocks; as many as four partial blocks may be fished off a vessel in a year.
- Alt 3: One catcher vessel size class; persons who don't hold full blocks may hold up to three partial blocks; as many as five partial blocks may be fished off a vessel in a year.
- Alt 4: Two catcher vessel size classes (less than or equal to 60 feet and over 60 feet); persons who don't hold full blocks may hold up to two partial blocks; as many as four partial blocks may be fished off a vessel in a year.
- Alt 5: Two catcher vessel size classes; persons who don't hold full blocks may hold up to three partial blocks; as many as five partial blocks may be fished off a vessel in a year.
- Alt 6: Three catcher vessel size classes (less than or equal to 35 feet, 36 to 60 feet, over 60 feet); persons who don't hold full blocks may hold up to two partial blocks; as many as four partial blocks may be fished off a vessel in a year.
- Alt 7: Three catcher vessel size classes; persons who don't hold full blocks may hold up to three partial blocks; as many as five partial blocks may be fished off a vessel in a year.

Alternatives 1 through 7 have been examined for halibut and Alternatives 1 through 5 have been examined for sablefish. This is in response to direction from the Council to look at as many as three catcher vessel size classes for halibut and as many as two for sablefish.

¹⁰Blocks will contain QS and not IFQ. The IFQ associated with a block will vary each year depending on the TAC in the area and the total number of QS outstanding. To make the "sweep up" rules operational, the Council may need to define them in terms of QS. That amount of IFQ associated with those QS may be above or below the originally specified IFQ thresholds in subsequent years.

2.0 ENVIRONMENTAL IMPACTS OF THE ALTERNATIVES

2.1 NEPA Consistency

An environmental assessment (EA) is required by the National Environmental Policy Act of 1969 (NEPA) to determine whether the action considered will result in significant impact on the human environment. The environmental analysis in the EA provides the basis for this determination and must analyze the intensity or severity of the impact of an action and the significance of an action with respect to society as a whole, the affected region and interests, and the locality. If an action is determined not to be significant based on an analysis of relevant considerations, the EA and the resulting finding of no significant impact (FONSI) would be the final environmental documents required by NEPA. An environmental impact study (EIS) must be prepared if the proposed action may cause a significant impact on the quality of the human environment.

An EA must include a brief discussion of the need for the proposal, the alternatives considered, the environmental impacts of the proposed action and the alternatives, and a list of document preparers. The need for the proposal is discussed in Chapter 1, the alternatives are described briefly in Chapter 1 and at length in Sections 3.2 and 3.3 of Chapter 3. A list of the preparers may be found in Chapter 8. This chapter provides a description of the environmental impacts including impacts on threatened and endangered species and marine mammals.

2.2 Effects on Marine Mammals

The Supplemental Analysis notes that under the IFQ program, which is Alternative 1 in this analysis, "the patterns of fishing in this fishery would change from a very brief opening with highly concentrated effort to an extended fishery over both time and space with effort being less concentrated but occurring over a longer time period and possibly over greater areas. Adverse interactions between fisheries and marine mammals have often been thought to be directly related to the concentration of fisheries in time and space. To the extent that is true for the fixed gear halibut and sablefish fisheries, the IFQ program, which will disperse the fishery in time and space, will decrease such effects."¹¹ This suggests that it may be less likely that marine mammals and longline gear will be at the same place at the same time if the fishery can be spread out in time and space.

There is, however, a possibility that interactions with marine mammals, specifically killer whales, may increase as fishing effort is spread out over time and space. Dalheim (1988) has documented interactions between longline fishermen and killer whales primarily in Prince William Sound and the Aleutian Islands. The killer whales are opportunistic feeders and learn to recognize the presence of longline gear in the area (by vessels and buoys) and respond to the sound of gear retrieval. As the longline gear is being retrieved and the sablefish are in the upper water column and on the water surface, killer whales may consume fish off the hooks. This results in less harvest to the vessel per unit of gear deployed. The "adverse impacts" occur if fishermen injure killer whales in their attempts to discourage them from feeding on the sablefish.

Some have suggested that confining longline gear to a narrow window of time may limit the amount of gear that is subject to killer whale predation because the whales can only be in one place at a time

¹¹Supplemental Analysis, page 7-9.

and there are not enough of them to be present at all gear retrievals.¹² If so, spreading longline gear retrieval out over time, as is the objective of the IFQ program, may provide a larger window of opportunity for killer whales to prey on the gear as it is being retrieved. However, if this occurs, fishermen will have increased time under an IFQ system to wait until killer whales move away from the area where their gear is set, to deploy dummy gear or to use other methods to distract or dissuade the killer whales.

Marine mammal interactions in the longline fisheries for halibut and sablefish are currently monitored through the Marine Mammal Exemption Program (MMEP). Under this program, all longline fisheries in the GOA and BSAI are categorized as to their expected impact on marine mammals. If increased interactions between fishermen and marine mammals occur in the future as a result of the IFQ program or amendments to it, changes in the classification and monitoring of these longline fisheries may be needed.

The block proposals identified in this analysis are expected to result in less consolidation of IFQ and, therefore, more individual fishing operations. While it is possible that an IFQ program may provide increased opportunities for killer whales to feed off sablefish while longline gear is being retrieved, the extent to which killer whale interactions will change is unknown. The change in fishing effort as a result of the block proposals is not expected to result in a significant increase in interactions with marine mammals over and above that which will be experienced under the current IFQ program (status quo).

2.3 Endangered Species Act

The following species, currently listed under the ESA, are present in the BSAI and GOA management areas.

Endangered

Northern right whale	<i>Balaena glacialis</i>
Gray whale	<i>Eschrichtius robustus</i>
Sei whale	<i>Balaenoptera borealis</i>
Blue whale	<i>Balaenoptera musculus</i>
Fin whale	<i>Balaenoptera physalus</i>
Humpback whale	<i>Megaptera novaeangliae</i>
Sperm whale	<i>Physeter macrocephalus</i>
Snake River sockeye salmon	<i>Oncorhynchus nerka</i>
Short-tailed albatross	<i>Diomedea albatrus</i>

Threatened

Steller sea lion	<i>Eumetopias jubatus</i>
Snake R. spring/summer chinook salmon	<i>Oncorhynchus tshawytscha</i>
Snake R. fall chinook salmon	<i>Oncorhynchus tshawytscha</i>
Spectacled eider	<i>Somateria fischeri</i>

¹²Personal Communication with Tamra L. Faris, a fishery biologist with the Protected Resources Management Division, NMFS Alaska Region in Juneau, Alaska.

To date, critical habitat has only been designated for the Steller sea lion.

Other sensitive seabird/marine bird species are listed below and include Category 1 and Category 2 species. Category 1 species are eligible for listing and await only the processing of higher priority species. Category 2 species are currently under review by the Fish and Wildlife Service for possible listing. Steller's eider is a category 1 species; all others are category 2 species.

Steller's eider
Marbled murrelet
Red-legged kittiwake
Kittlitz's murrelet

Polysticta stelleri
Brachyramphus marmoratus
Rissa brevirostris
Brachyramphus brevirostris

Status of Section 7 Consultations for above listed species:

Cetaceans: Formal consultation on the effects of the GOA groundfish fishery on listed cetaceans was concluded on April 19, 1991. The biological opinion issued for that consultation considered all aspects of the fishery and concluded that the fishery was unlikely to adversely affect listed cetaceans. The April 19, 1991, biological opinion on the effects of the BSAI groundfish fishery on listed species did not specifically evaluate effects to listed cetaceans in any detail. Instead it incorporated by reference, an earlier biological opinion on the effects of the BSAI groundfish fishery on cetaceans, issued December 14, 1979, and the biological opinion issued July 5, 1989, on the marine mammal exemption program. The April 19, 1991, BSAI opinion reiterated the conclusion of these earlier opinions that the BSAI groundfish fishery was unlikely to jeopardize listed cetaceans. Unless there is some change in the GOA or BSAI fishery or information on cetaceans that would indicate an effect or relationship exists that we have not previously considered, it is not necessary to reinitiate consultation for these species.

Salmon: Effects of the GOA and BSAI groundfish fisheries on listed salmon were considered by informal consultations with the NMFS Northwest Region for fishing years 1992 and 1993 (February 20, 1992, April 21, 1993, respectively). In addition to the environmental assessment documents on the fisheries, the Alaska Region wrote a biological assessment (March 17, 1993) and the decisional document that accompanied the April 21, 1993, memorandum concluding that salmon species listed under the ESA were not likely to be adversely affected by the 1993 TACs, or by a change of the non-rope pollock fishing season in the BSAI. Subsequent informal Section 7 consultation occurred for BSAI Amendment 28 (June 7, 1993), and for GOA Amendment 31 (September 22, 1993).

Consultation for fishing year 1994 and for future years needs to be addressed. The Northwest Region stated their intention to rely on multiple-year consultations when the effects of an action on listed salmon can be evaluated adequately over the long term. We have also been advocating this approach. Tamra Faris and Jessica Gharrett are writing a biological assessment containing a description of anticipated fishing activities conducted under the FMPs, including annual specification amounts, in multiple-year terms and the current information on potential takings by the fishery of the listed salmon. Peter Dygert, NW Region, has been in contact with us regarding the information assessment and its packaging. When the impact analysis is complete, we should again confer with the NW Region to agree on a time frame for the consultation and to determine whether a formal or informal consultation is required. At a minimum, the process will be completed before calendar year 1993 ends.

Steller sea lions: Formal consultation on the effects of the BSAI and GOA groundfish fisheries on Steller sea lions was concluded on April 19, 1991. The biological opinions issued for these consultations considered all aspects of the fisheries and concluded that the BSAI and GOA fisheries were unlikely to jeopardize the continued existence and recovery of the Steller sea lion population. Subsequently, Section 7 consultation has been reinitiated for every change to the FMP or fishery that could affect Steller sea lions. Numerous informal consultations have been conducted; formal consultation was reinitiated for FM actions that appeared likely to result in adverse effects. Specifically, formal consultation was conducted and biological opinions issued for: (1) GOA 1991 pollock TAC, June 5, 1991; (2) GOA 1991 pollock fourth quarter allocation, September 20, 1991; (3) 1992 GOA TAC specifications, December 23, 1991; (4) 1992 BSAI TAC specifications, January 21, 1992; and (5) Amendment 18 to the BSAI FMP (inshore/offshore), March 4, 1992. PRMD will continue to track FM actions and will consult, formally and informally, as needed. The next anticipated consultation will consider effects of the 1994 TAC specifications, following the December 1993 meeting of the North Pacific Fishery Management Council.

Seabirds: Formal consultation was concluded on the effects of the NMFS Interim Incidental Take Exemption Program on the short-tailed albatross and other species listed under the ESA and under the jurisdiction of the USDI Fish and Wildlife Service (FWS) on July 3, 1989. That consultation concluded that BSAI and GOA groundfish fisheries would adversely affect the short-tailed albatross and would result in the incidental take of up to two birds per year, but would not jeopardize the continued existence of that species. A technical memorandum dated July 21, 1989, from the FWS to NMFS documented actions intended to reduce incidental take of the marbled murrelet, a species not listed, but a category 2 candidate. Subsequently, Section 7 consultation has been reinitiated for major changes to the FMP or fishery that might affect the short-tailed albatross; these have been informal consultations, and have concluded that no additional adverse impacts beyond those in the aforementioned formal consultation would occur. These subsequent informal consultations include: (1) 1992 BSAI and GOA TAC specifications, January 17, 1992; (2) 1993 BSAI and GOA TAC specifications, February 1, 1993, and clarified February 12, 1993; (3) delay of the second quarter pollock fishing season in the GOA, December 22, 1992; (4) careful release of halibut in hook-and-line fisheries, March 12, 1993; (5) delay of the second pollock fishing seasons in the BSAI and GOA, March 12, 1993; (6) BSAI Amendment 28, April 14, 1993; (7) GOA Amendment 31, July 21, 1993; and (8) 1994 BSAI and GOA TAC specifications, February 14, 1994.

None of the alternatives considered under this action will affect any of the above listed or candidate species.

2.4 Coastal Zone Management Act

The alternatives in this amendment are consistent, to the maximum extent practicable, with the provisions of the Coastal Zone Management Act of 1972 and would not conflict with State of Alaska laws or regulations. The halibut fisheries are managed by the IPHC and the NPFMC all the way to the shoreline and fishing permits are issued by the IPHC which also aggregates all fish ticket landings records. In terms of sablefish, these alternatives would affect only those fishing under authority of a federal groundfish permit.

2.5 NEPA Finding of No Significant Impact

Under NEPA an action has a significant impact if it:

- a. jeopardizes the productive capability of the stocks;
- b. damages ocean and coastal habitats;
- c. adversely impacts public health or safety;
- d. adversely affects endangered or threatened species or marine mammals; and/or
- e. has cumulative effects on stock.

As noted in Section 2.3 above, the alternatives are unlikely to adversely impact endangered or threatened species. The following discussion will therefore address the stock, habitat, and safety issues.

The Full/Partial Block alternatives are not likely to jeopardize the productive capability of the stocks or have a cumulative effect on the stocks. Sections 2.2.19 to 2.2.27 of the Supplemental Analysis describe the conservation and environmental impacts of the IFQ program that is used as the status quo in this analysis. The Full/Partial Block alternatives may increase the number of active fishermen, but will probably have relatively little impact on aggregate harvest. They are likely to have little impact on stocks compared to the status quo IFQ program.

The Full/Partial Block proposals are not likely to impose significant damage on the coastal or marine habitat. If the Full/Partial Block alternatives lead to an actual increase in the number of separate fishing operations they may lead to some increase in vessel traffic over the status quo. An increase in the number of fishing operations would probably not be associated with a proportionate increase in gear activity. Each fisherman will have IFQ and an incentive to take this IFQ as efficiently as possible. The gear activity needed to take the TAC will not change much as the number of fishermen changes since any increase in the number of fishermen is likely to be offset by a decrease in the average amount of gear activity by each one.

Section 2.2.1 in the Supplemental Analysis indicates that the IFQ program is expected to increase the safety of fishermen "by reducing substantially the incentive fishermen have to disregard factors that increase the risk of accidents."¹³ The program does this by stopping the "race for the fish" that exists under a common access fishery and by reducing the opportunity costs of safe behavior. The Full/Partial Block alternatives do not change the incentives for safe behavior that exist under the status quo IFQ alternative. The Full/Partial Block alternatives will not, therefore, adversely impact public health or safety.

¹³Supplemental Analysis, page 2-3.



3.0 REGULATORY IMPACT REVIEW: ECONOMIC IMPACTS

3.1 Introduction

This chapter provides information about the economic and socioeconomic impacts of the alternatives including identification of the individuals or groups that may be affected by the action, the nature of the impacts, quantification of the economic impacts if possible, and discussion of the tradeoffs between qualitative and quantitative benefits and costs.

The requirements for all regulatory actions specified in E.O. 12866 are summarized in the following statement from the order:

In deciding whether and how to regulate, agencies should assess all costs and benefits of available regulatory alternatives, including the alternative of not regulating. Costs and benefits shall be understood to include both quantifiable measures (to the fullest extent that these can be usefully estimated) and qualitative measures of costs and benefits that are difficult to quantify, but nevertheless essential to consider. Further, in choosing among regulatory approaches, agencies should select those approaches that maximize net benefits (including potential economic, environment, public health and safety, and other advantages; distributive impacts; and equity), unless a statute requires another regulatory approach.

This chapter also addresses the requirements of both E.O. 12866 and the Regulatory Flexibility Act to provide adequate information to determine whether an action is "significant" under E.O. 12866 or will result in "significant" impacts on small entities under the RFA. E.O. 12866 defines a "significant regulatory action" as likely to result in (1) an annual effect on the economy of \$100 million or more; (2) an adverse effect in a material way on the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local or tribal governments or communities; or (3) a novel legal or policy issue. Requirements of the RFA are addressed in Chapter 4.

This chapter provides an RIR for the Full/Partial Block alternatives. It provides estimates of the maximum possible consolidation by fishermen and discusses the potential costs and benefits of the Full/Partial Block alternatives. Separate sections examine maximum possible consolidation for the halibut and sablefish fisheries.

It is impossible to accurately predict the actual consolidation of blocks that will take place under the Full/Partial Block alternatives. Even if an initial level of consolidation could be estimated, that level may change through time in response to changes in fish prices, fishing technology, fisheries infrastructure, socio-economic conditions, and conditions in related fisheries.

Therefore, to provide a way to compare the consolidation of blocks that will take place under the Full/Partial Block alternatives, the authors have estimated the maximum possible consolidation under the alternatives. Maximum possible consolidation can be estimated because it can be calculated on the basis of provisions incorporated into the alternatives. It is useful information since it provides a measure of the strength of the "guarantee" that the fleet will not fall below a certain size. Maximum possible consolidation has been estimated using a model with a simple set of assumptions.

3.1.1 Consolidation Within a Management Area

Under the Full/Partial Block alternatives there will be two classes of QS holders, those holding full blocks and one partial block, and those holding no full blocks, but one, two, or three partial blocks. The possible minimum numbers for each class of share holders have been calculated separately in this analysis. Twelve sub-sections in this chapter each deal with one of the alternatives. Each sub-section has two tables, one with the partial block estimates and one with the full block estimates.

Each full block contains enough QS to provide 20,000 pounds of IFQ in the first year of the program. In subsequent years the number of QS in the block will remain constant, but the IFQ associated with those QS will change as fishery TACs change. Note also that the number of pounds of IFQ associated with each QS changes from one management area to another so that the number of QS needed to make a 20,000 pound full block will also change from area to area. In this analysis, the first year of the program the 1991 TACs have been used in the calculations. The number of QS in a full block would vary if different TACs were used.

The possible minimum number of persons who may be left holding full blocks is determined by calculating the maximum number of full blocks any one person may hold given the plan's QS aggregation limit for the area,¹⁴ dividing the total number of full blocks in the area by that maximum, and rounding the result up to the nearest whole number. A remainder greater than zero means that one person holding full blocks will not hold as many full blocks as are allowed given the aggregation limit.

Each person holding full blocks is also allowed to hold a partial block. The model assigns the full block holders the largest partial blocks available that would not put them over the aggregation limit. A full block holder who does not hold as many full blocks as would be allowed by the aggregation limit is given the largest available partial block. Other full block holders are given the largest partial blocks available that are less than the difference between the aggregation limit and the total pounds already held as full blocks.

The discussion in this chapter uses the concepts of full and partial block packages. A full block package is defined to be a holding of one or more full blocks and one partial block. A partial block package is defined to be a holding of one, two or three partial blocks, but no full blocks.

The average size of a full block package is less than the aggregation limit for two reasons. First, in many cases, there are not enough full blocks to give each full block holder the maximum amount of full blocks. A full block holder in an area may end up holding fewer full blocks than are technically possible. Secondly, the partial blocks that can be given to full block holders, without putting them over the aggregation limit, are not generally large enough to allow a full block holder to reach the aggregation limit.

In IPHC Area 4A the halibut QS aggregation limit, worth 19,154 pounds of IFQ using 1991 TACs, was smaller than the sizes of the full blocks considered in these alternatives. In this area each fisherman's allocation was broken up into partial blocks with maximum sizes of 19,154 pounds of IFQ. Persons receiving partial blocks equal to 19,154 pounds were not allowed to hold more than one partial block.

¹⁴The plan's aggregation limits are described below in sub-sections 3.2.1 and 3.3.1. In general there are limits on the proportion of each area's QS that may be held by one QS holder.

In the tables the percent of the TAC that is held by persons with full blocks includes the amount of TAC represented by the full blocks, plus the amount of TAC in partial blocks held by full block holders.

The possible minimum number of partial block holders is calculated after "sweeping up" the halibut blocks under 1,000 pounds and the sablefish blocks under 3,000 pounds and subtracting the number of partial blocks held by full block holders. The number of partial blocks remaining is then divided by two or by three depending on whether the alternative allows persons without full blocks to hold two or three partial blocks. The result of this division is then rounded up to the nearest whole number to get the estimate.

While the analysis focuses on the minimum numbers of block holders, the alternatives also contain provisions which would allow only four or only five partial blocks to be fished off of one vessel during a year. This puts a lower bound on the number of vessels that may be used to fish partial blocks in a year. Since these limits on the numbers of partial blocks that may be fished from a vessel are larger than the limits on the number of partial blocks that any block holder may hold, the possible minimum number of vessels which could fish partial blocks in each fishery is lower than the possible minimum number of partial block holders.

These vessel constraints do not apply to the full blocks. However, the plan does contain provisions which effectively restrict the number of full blocks that may be fished from a vessel. Section 676.22, subpart h of the Final Rule contains the following provision:¹⁵

(h) Vessel limitations. (1) No vessel may be used, during any fishing year, to harvest more than one-half percent (0.005) of the combined total catch limits of halibut for IFQ regulatory areas 2C, 3A, 3B, 4A, 4B, 4C, 4D, and 4E, except that, in IFQ regulatory area 2C, no vessel may be used to harvest more than 1 percent (0.01) of the halibut catch limit for this area; and

(2) No vessel may be used, during any fishing year, to harvest more than 1 percent (0.01) of the combined fixed gear TAC of sablefish for the Gulf of Alaska and Bering Sea and Aleutian Islands IFQ regulatory areas, except that, in the IFQ regulatory area east of 140° west longitude, no vessel may be used to harvest more than 1 percent (0.01) of the fixed gear TAC of sablefish for this area.

These regulations are in addition to the regulations governing the aggregation of QS by individual QS holders.

Given these restrictions, if the fishery reached its maximum possible consolidation the typical full block package would be large enough so that no other full or partial block packages could be fished from the same vessel in that area. Thus, the possible minimum number of vessels that could fish full blocks could be estimated as the possible minimum number of full block holders.

For these reasons, when a block holder may own two partial blocks and four may be fished off of a vessel during a year, the possible minimum number of vessels fished can be estimated to be fifty

¹⁵Federal Register 58(215) 59409. 50CFR Part 676.22, subpart h.

percent of the possible minimum number of partial block holders plus the possible minimum number of full block holders. When a block holder may own three partial blocks and five may be fished off of a vessel, the possible minimum number of vessels fished can be estimated to be about sixty percent of the possible minimum number of partial block holders plus the possible minimum number of full block holders.

In some cases it has been necessary to combine vessel categories in the tables to preserve the confidentiality of the results. The management areas for twenty-five of the sablefish observations were unknown. These observations were not used in the sablefish analysis and are not reported in the sablefish tables.

3.1.2 GOA and BSAI Aggregate Consolidation under Full/Partial Blocks

The maximum consolidation, throughout the waters off of Alaska, of sablefish and halibut block packages cannot be determined by adding the minimum block holdings across areas. That is because persons can hold blocks in more than one area. A person may hold up to two or three partial blocks or they may hold any number of full blocks and one partial block in each area. Beyond these restrictions, only the aggregation limits set out in the current plan limit the number of blocks a person can hold.

Area-by-area estimates of maximum possible block consolidation are presented in the tables in the following sub-sections. From these tables it is possible to derive estimates of maximum consolidation, throughout the waters off of Alaska, of full and partial blocks. The minimum number of block holders across all areas cannot be less than the largest remaining number of block holders in any area. Therefore, in this report, the minimum number of persons who may be operating throughout the state is estimated by looking for the area with the largest number of block holders, when consolidation has gone as far as possible.

3.2 Halibut

3.2.1 Alt 1: Status Quo

The status quo is the current IFQ program. The expected consequences of this program are described in the Supplemental Analysis of March 27, 1992. The Full/Partial Block proposal is a modification of that program.

The maximum consolidation possible under the current IFQ plan is determined by a set of aggregation limits in Section 676.22, subpart f of the Final Rule.¹⁶ These are:

676.22(f) : Halibut QS use. Unless the amount in excess of the following limits was received in the initial allocation of halibut QS, no person, individually or collectively, may use more than:

- (1) One percent (0.01) of the total amount of halibut QS for IFQ regulatory area 2C;*
- (2) One-half percent (0.005) of the total amount of halibut QS for IFQ regulatory areas 2C, 3A, and 3B, combined; and*

¹⁶See 50 CFR Section 676.22, subpart f in the Federal Register. 58(215) 59408.

(3) One-half percent (0.005) of the total amount of halibut QS for IFQ regulatory areas 4A, 4B, 4C, 4D, and 4E, combined.

These aggregation limits imply the area-by-area limits on maximum IFQ holdings summarized in Table 3.2.1-1. Given these aggregation limits there can be no fewer than 200 halibut QS holders in the waters off Alaska. Of these, there can be no fewer than 100 in Area 2C, no fewer than 200 in 2C, 3A, and 3B, taken together, and no fewer than 200 in areas 4A, 4B, 4C, 4D, and 4E, taken together.

Estimates of the minimum numbers possible in each of the IPHC areas are shown in Table 3.2.1-2. These estimates are made by dividing the area TAC by the area aggregation limit and rounding the result up to the nearest whole number. The possible minimum numbers in each area sum to more than the possible number throughout the GOA and BSAI because persons in one area may hold QS in other areas.

The Supplemental Analysis used models to help predict net economic benefits from the halibut IFQ program. Among other things, the models estimated the statewide number of vessels which would remain in the IFQ fishery under different assumptions. The models did not incorporate the current plan's aggregation limits and used only vessels that had landings of at least 500 pounds in areas 2C, 3A, 3B, or 4A. Without an IFQ program there were about 3,796 vessels in this category in 1990.

Assuming that there would be consolidations of QS within a vessel category but not across vessel categories, and that each remaining vessel would be involved in the fishery for 200 days a year, the halibut harvesting cost model predicted that the number of vessels would decline from about 3,796 vessels to between 147 and 192 vessels. Using the same assumptions, but allowing consolidation across vessel classes produced an estimate of 72 to 94 vessels. These estimates are below the maximum ownership\consolidation caps set by the Council and mentioned above.

The halibut harvesting cost model predicted higher remaining fleet levels if each remaining vessel would be involved in the halibut fishery only 50 days a year. Here the estimates ranged from 588 to 768 vessels. Under these assumptions the consolidation caps in the existing plan would not be binding.¹⁷

¹⁷These aggregation limits are discussed in the Supplemental Analysis at pages 2-9 to 2-10.

Table 3.2.1-1. Binding Area IFQ Limits for Halibut
1991 TACs

Area	Number of Quota Shares (shares)	Number of Individual Quotas (lbs)	IFQs per share (lbs)	Limit on Share Holdings (shares)	Implied Limit on Individual Quota Holdings (lbs)
2C	57,575,315	7,400,000	.128527	575,753	74,000
3A	175,411,162	26,600,000	.151644	1,415,833	214,702
3B	50,180,143	8,800,000	.175368	1,415,833	248,292
4A	13,107,298	1,700,000	.129699	147,682	19,154
4B	8,262,195	1,700,000	.205756	147,682	30,387
4C	3,743,128	600,000	.160294	147,682	23,673
4D	4,258,456	600,000	.140896	147,682	20,808
4E	165,417	100,000	.604533	147,682	89,279

Table 3.2.1-2. Possible Minimum Number of Halibut Status Quo QS Holders
Estimated Minimums by IPHC Area

Area	Area TAC	Area Holdings Limit	Potential Minimum Number of Holders
2C	7,400,000	74,000	100
3A	26,600,000	214,702	124
3B	8,800,000	248,292	36
4A	1,700,000	19,154	89
4B	1,700,000	30,387	56
4C	600,000	23,673	26
4D	600,000	20,808	29
4E	100,000	89,279	2

3.2.2 Alt 2: One Catcher Size Class, Two Partial

Alternative 2 incorporates the Full/Partial Block proposal into the halibut management plan. In this alternative there are no separate catcher vessel size classes and each person who does not hold a full block may hold as many as two partial blocks. The partial block results are summarized in Table 3.2.2-1 and the full block results are summarized in Table 3.2.2-2.

Following the discussion in Sub-section 3.1.1, the maximum level of consolidation statewide is estimated by taking the highest number of QS holders in any area. In Alternative 2, Area 3A would have the highest number of persons holding QS if maximum possible aggregation occurred. There would be 1,113 persons holding partial block packages in the catcher and freezer vessel fleet categories, and there would be 70 persons holding full block packages. Thus the possible minimum number of persons that would be left in the fleet if consolidation reached its limit would be 1,183.

As many as four partial blocks may be fished off of a vessel under this alternative. The possible minimum number of vessels fished in each area and vessel class can be estimated by taking fifty percent of the possible number of partial block holders and adding the number of full block holders. The possible minimum number of active vessels would be 627.

Under the status quo alternative, QS issued to the owners of catcher vessels within a length class must always be fished by vessels within that class. The catcher length classes were: vessels less than or equal to 35 feet, vessels from 36 to 60 feet, and vessels over 60 feet. This is not true under Alternative 2. Under this alternative, QS issued to the owners of catcher vessels in one size class can be transferred to the owners of catcher vessels in another size class. While Alternative 2 will guarantee the preservation of block packages of moderate size, through the limit on the number of partial blocks that may be held, it cannot guarantee that these packages will continue to be held by the owners of small vessels.

Table 3.2.2-1. Alternative 2: Halibut Partial Block Analysis
Numbers and size of Partial Block packages by area and vessel type.

Alternative 2:
Halibut. 20,000 lb. Full Block Size.
2 Partial Block accumulation limit.
Catcher and Freezer vessels.

Mgmt Area	Vessel Category	Initial Number of Partial Blocks	Minimum Number of Partial Block Packages	Average Size of Partial Block Package	Percent Area TAC in Partial Block Packages
2C	Catcher/Freezer	2,371	828	7,999	89.5
3A	Catcher/Freezer	3,223 7	1,110 3	10,633 4,224	44.4 0.0
3B	Catcher/Freezer	879 7	370 3	11,424 19,902	48.0 0.7
4A	Catcher/Freezer	358 4	162 2	10,321 14,011	98.4 1.6
4B	Catcher/Freezer	155	54	12,451	39.6
4C	Catcher/Freezer	82	32	11,635	62.1
4D	Catcher/Freezer	66	29	13,012	62.9
4E	Catcher	155	25	4,000	100.0

Mgmt Area identifies the IPHC halibut management area.

Vessel Category identifies the vessel class.

Initial Number of Partial Blocks shows the number of partial blocks originally issued for the area and vessel class. This number is the number prior to the "sweeping up" of partial blocks under 1,000 pounds.

Minimum Number of Partial Block Packages shows the minimum possible number of partial block packages after "sweeping up" and other possible consolidation.

Average Size of Partial Block Packages shows the average size of the partial block packages in column 4 measured in pounds of IFQ in 1991.

Pct. Area TAC in Partial Block Packages shows the percentage of the TAC in the IPHC management area in partial block packages held by operators in the relevant vessel class. This percentage does not necessarily include all the quota in partial blocks because some full block holders may hold partial blocks.

Table 3.2.2-2. Alternative 2: Halibut Full Block Analysis
Numbers and size of Full Block packages by area and vessel type.

Alternative 2:
Halibut. 20,000 lb. Full Block Size.
Catcher and Freezer Vessels.

Mgmt Area	Vessel Category	Initial Number of Full Blocks	Maximum Full Block Package Size	Minimum Number of Full Block Packages	Average Size of Full Block Package	Percent Area TAC in Full Block Packages
2C	Catcher/Freezer	31	74,000	11	70,629	10.5
3A	Catcher/Freezer	685	214,702	69	212,602	55.1
		5	214,702	1	114,851	0.4
3B	Catcher/Freezer	212	248,292	18	244,114	49.9
		5	248,292	1	119,375	1.4
4A	Catcher/Freezer	0	19,154	0	0	0.0
		0	19,154	0	0	0.0
4B	Catcher/Freezer	37	30,387	37	27,774	60.5
4C	Catcher/Freezer	10	23,673	10	22,767	37.9
4D	Catcher/Freezer	11	20,808	11	20,242	37.1
4E	Catcher	0	89,279	0	0	0.0

Mgmt Area

identifies the IPHC halibut management area.

Vessel Category

identifies the vessel class.

Initial Number of Full Blocks

shows the number of full blocks originally issued for the area and vessel class.

Maximum Full Block Package Size

shows the maximum amount of the TAC that any person in the area could hold given the aggregation limits in the original plan.

Minimum Number of Full Block Packages

shows the minimum possible number of persons holding full blocks after consolidation had gone to its maximum extent.

Average Size of Full Block Packages

shows the average size of the full block packages in column 5 measured in pounds of IFQ in 1991. The average size of a full block package includes some partial block quota shares.

Pct. Area TAC in Full Block Packages

shows the percentage of the TAC in the IPHC management area in full block packages held by operators in the relevant vessel class. Some of this represents partial block QS held by full block holders.

3.2.3 Alt 3: One Catcher Size Class, Three Partial Blocks

Alternative 3 incorporates the Full/Partial Block proposal into the halibut management plan. In this alternative there are no separate catcher vessel size classes, and each person who does not hold a full block may hold as many as three partial blocks. Of the alternatives reported here, this is the closest to the Full/Partial proposal as originally proposed. The main differences between this alternative and the original proposal are the change in the size of the full blocks from 10,000 to 20,000 pounds of IFQ and the introduction of the sweep up provision for blocks under 1,000 pounds.

The method used to calculate the minimum possible numbers of block holders under this alternative is the same as that described under Alternative 2. The only difference is that a person is allowed to hold three rather than two partial blocks if they don't hold any full blocks. Allowing a person without full blocks to hold three rather than two partial blocks increases the average size of the partial block packages and reduces the number of separate partial block holders. It does not affect the full block holders and it does not affect the total amounts of QS held by full and partial block holders.

An increase in the number of partial blocks a person can hold from two to three tends to reduce the possible minimum number of partial block holders by about a third, and to increase the average size of the partial block holdings by 50% once the minimum number of block holders has been reached.

As noted earlier, the maximum level of consolidation throughout Alaska is estimated by taking the highest number of QS holders in any area. In Alternative 3, Area 3A would have the highest number of persons holding QS if the maximum possible aggregation occurred. There would be 742 persons holding partial block packages in the catcher and freezer vessel fleet categories, and there would be 70 persons holding full block packages. Thus the possible minimum number of persons that would be left in the fleet if consolidation reached its limit would be 812.

As many as five partial blocks may be fished off of a vessel under this alternative. The possible minimum number of vessels fished in each area and vessel class can be estimated by taking sixty percent of the possible number of partial block holders and adding the number of full block holders. The possible minimum number of active vessels would be 516.

Under the status quo alternative, QS issued to the owners of catcher vessels within a length class must always be fished by vessels within that class. The catcher length classes were, vessels less than or equal to 35 feet, vessels from 36 to 60 feet, and vessels over 60 feet. This is not true under Alternative 3. Under this alternative, QS issued to the owners of vessels in one size class can be transferred to the owners of vessels in another size class. While Alternative 3 will guarantee the preservation of block packages of moderate size, through the limit on the number of partial blocks that may be held, it cannot guarantee that these packages will continue to be held within the same vessel size category.

Table 3.2.3-1. Alternative 3: Halibut Partial Block Analysis
Numbers and size of Partial Block packages by area and vessel type.

Alternative 3:
Halibut. 20,000 lb. Full Block Size.
3 Partial Block accumulation limit.
Catcher and Freezer vessels.

Mgmt Area	Vessel Category	Initial Number of Partial Blocks	Minimum Number of Partial Block Packages	Average Size of Partial Block Package	Percent Area TAC in Partial Block Packages
2C	Catcher/Freezer	2,371	552	11,998	89.5
3A	Catcher/Freezer	3,223 7	740 2	15,950 6,336	44.4 0.0
3B	Catcher/Freezer	879 7	247 2	17,113 29,852	48.0 0.7
4A	Catcher/Freezer	358 4	113 2	14,796 14,011	98.4 1.6
4B	Catcher/Freezer	155	36	18,677	39.6
4C	Catcher/Freezer	82	22	16,924	62.1
4D	Catcher/Freezer	66	19	19,860	62.9
4E	Catcher	155	17	5,882	100.0

Mgmt Area	identifies the IPHC halibut management area.
Vessel Category	identifies the vessel class.
Initial Number of Partial Blocks	shows the number of partial blocks originally issued for the area and vessel class. This number is the number prior to the "sweeping up" of partial blocks under 1,000 pounds.
Minimum Number of Partial Block Packages	shows the minimum possible number of partial block packages after "sweeping up" and other possible consolidation.
Average Size of Partial Block Packages	shows the average size of the partial block packages in column 4 measured in pounds of IFQ in 1991.
Pct. Area TAC in Partial Block Packages	shows the percentage of the TAC in the IPHC management area in partial block packages held by operators in the relevant vessel class. This percentage does not necessarily include all the quota in partial blocks because some full block holders may hold partial blocks.

Table 3.2.3-2. Alternative 3: Halibut Full Block Analysis
Numbers and size of Full Block packages by area and vessel type.

Alternative 3:
Halibut. 20,000 lb. Full Block Size.
Catcher and Freezer Vessels.

Mgmt Area	Vessel Category	Initial Number of Full Blocks	Maximum Full Block Package Size	Minimum Number of Full Block Packages	Average Size of Full Block Package	Percent Area TAC in Full Block Packages
2C	Catcher/Freezer	31	74,000	11	70,629	10.5
3A	Catcher Freezer	685 5	214,702 214,702	69 1	212,602 114,851	55.1 0.4
3B	Catcher Freezer	212 5	248,292 248,292	18 1	244,114 119,375	49.9 1.4
4A	Catcher Freezer	0 0	19,154 19,154	0 0	0 0	0.0 0.0
4B	Catcher/Freezer	37	30,387	37	27,774	60.5
4C	Catcher/Freezer	10	23,673	10	22,767	37.9
4D	Catcher/Freezer	11	20,808	11	20,242	37.1
4E	Catcher	0	89,279	0	0	0.0

Mgmt Area

identifies the IPHC halibut management area.

Vessel Category

identifies the vessel class.

Initial Number of Full Blocks

shows the number of full blocks originally issued for the area and vessel class.

Maximum Full Block Package Size

shows the maximum amount of the TAC that any person in the area could hold given the aggregation limits in the original plan.

Minimum Number of Full Block Packages

shows the minimum possible number of persons holding full blocks after consolidation had gone to its maximum extent.

Average Size of Full Block Packages

shows the average size of the full block packages in column 5 measured in pounds of IFQ in 1991. The average size of a full block package includes some partial block quota shares.

Pct. Area TAC in Full Block Packages

shows the percentage of the TAC in the IPHC management area in full block packages held by operators in the relevant vessel class. Some of this represents partial block QS held by full block holders.

3.2.4 Alt 4: Two Catcher Size Classes, Two Partial

Alternative 4 incorporates the Full/Partial Block proposal into the halibut management plan. In this alternative catcher vessels are divided into two classes: those that are less than or equal to 60 feet and those greater than 60 feet. In addition, any person who does not hold a full block may hold as many as two partial blocks.

The introduction of the two vessel classes does not change the total numbers of partial or full blocks to any great extent. There are some very small changes due to the fact that people are no longer able to form a few combinations that were once possible when all the catcher blocks within an area were eligible for combination with each other. However, the number of total block packages never changes by more than two or three.

As noted earlier, the maximum level of consolidation statewide is estimated by taking the highest number of QS holders in any area. In Alternative 4 Area 3A would have the highest number of persons holding QS if the maximum possible aggregation occurred. There would be 1,114 persons holding partial block packages in the catcher and freezer vessel fleet categories, and there would be 70 persons holding full block packages. Thus the possible minimum number of persons that would be left in the fleet if consolidation reached its limit would be 1,184.

As many as four partial blocks may be fished off of a vessel under this alternative. The possible minimum number of vessels fished in each area and vessel class can be estimated by taking fifty percent of the possible number of partial block holders and adding the number of full block holders. The possible minimum number of active vessels would be 627.

Under the status quo alternative, QS issued to the owners of catcher vessels within a length class must always be fished by vessels within that class. The catcher length classes were, vessels less than or equal to 35 feet, vessels from 36 to 60 feet, and vessels over 60 feet. This is not true for Alternatives 2 or 3 where there are no catcher vessel classes.

In contrast, under Alternative 4, QS issued to the owners of catcher vessels less than 60 feet must always be fished from catcher vessels less than 60 feet. This provides part of the protection of the vessel classes under the status quo, although it fails to guarantee that QS issued to vessels less than or equal to 35 feet will not be transferred to vessels from 36 to 60 feet, as the status quo does. As under the status quo, QS issued to catcher vessels over 60 feet must continue to be fished by vessels in this size class.

Table 3.2.4-1. Alternative 4: Halibut Partial Block Analysis
Numbers and size of Partial Block packages by area and vessel type.

Alternative 4:
Halibut. 20,000 lb. Full Block Size.
2 Partial Block accumulation limit.
Catcher Vessels \leq and $>$ 60 ft. and Freezer vessels.

Mgmt Area	Vessel Category	Initial Number of Partial Blocks	Minimum Number of Partial Block Packages	Average Size of Partial Block Packages	Percent Area TAC in Partial Block Packages
2C	Catcher \leq 60	2,323	809	7,977	87.2
	Catcher $>$ 60	40	17	8,552	2.0
	Unknown/Freezer	8	3	8,085	0.4
3A	Catcher \leq 60	2,962	1,002	10,166	38.3
	Catcher $>$ 60	253	107	15,268	6.1
	Unknown	8	2	2,692	0.0
	Freezer	7	3	4,224	0.0
3B	Catcher \leq 60	706	293	10,073	33.5
	Catcher $>$ 60	173	77	16,346	14.3
	Freezer	7	3	19,902	0.7
4A	Catcher \leq 60	253	105	8,004	49.4
	Catcher $>$ 60	105	57	14,588	48.9
	Freezer	4	2	14,011	1.6
4B	Catcher \leq 60	83	33	8,689	16.9
	Catcher $>$ 60/Freezer	72	21	19,015	23.5
4C	Catcher \leq 60	61	25	11,137	46.4
	Catcher $>$ 60/Freezer	21	8	11,898	15.9
4D	Catcher \leq 60/ Catcher $>$ 60/ Freezer	66	29	13,021	63.0
4E	Catcher \leq 60	152	25	3,724	93.1
	Catcher $>$ 60/ Unknown	3	2	3,448	6.9

Mgmt Area identifies the IPHC halibut management area.

Vessel Category identifies the vessel class.

Initial Number of Partial Blocks shows the number of partial blocks originally issued for the area and vessel class. This number is the number prior to the "sweeping up" of partial blocks under 1,000 pounds.

Minimum Number of Partial Block Packages shows the minimum possible number of partial block packages after "sweeping up" and other possible consolidation.

Average Size of Partial Block Packages shows the average size of the partial block packages in column 4 measured in pounds of IFQ in 1991.

Pct. Area TAC in Partial Block Packages shows the percentage of the TAC in the IPHC management area in partial block packages held by operators in the relevant vessel class. This percentage does not necessarily include all the quota in partial blocks because some full block holders may hold partial blocks.

Table 3.2.4-2. Alternative 4: Halibut Full Block Analysis
Numbers and size of Full Block packages by area and vessel type.

Alternative 4:
Halibut. 20,000 lb. Full Block Size.
Catcher Vessels <= and > 60 ft. and Freezer Vessels.

Mgmt Area	Vessel Category	Initial Number of Full Blocks	Maximum Full Block Package Size	Minimum Number of Full Block Packages	Average Size of Full Block Packages	Percent Area TAC in Full Block Packages
2C	Catcher <= 60	26	74,000	9	72,150	8.8
	Catcher > 60	5	74,000	2	63,782	1.7
	Unknown/Freezer	0	74,000	0	0	0.0
3A	Catcher <= 60	390	214,702	39	214,206	31.4
	Catcher > 60	295	214,702	30	209,757	23.7
	Unknown	0	214,702	0	0	0.0
	Freezer	5	214,702	1	114,851	0.4
3B	Catcher <= 60	77	248,292	7	229,810	18.3
	Catcher > 60	135	248,292	12	233,517	31.8
	Freezer	5	248,292	1	119,375	1.4
4A	Catcher <= 60	0	19,154	0	0	0.0
	Catcher > 60	0	19,154	0	0	0.0
	Freezer	0	19,154	0	0	0.0
4B	Catcher <= 60	8	30,387	8	28,643	13.5
	Catcher > 60/Freezer	29	30,387	29	27,062	46.2
4C	Catcher <= 60	5	23,673	5	23,009	19.2
	Catcher > 60/Freezer	5	23,673	5	22,272	18.6
4D	Catcher <= 60/ Catcher > 60/ Freezer	11	20,808	11	20,217	37.0
4E	Catcher <= 60	0	89,279	0	0	0.0
	Catcher > 60/ Unknown	0	89,279	0	0	0.0

Mgmt Area	identifies the IPHC halibut management area.
Vessel Category	identifies the vessel class.
Initial Number of Full Blocks	shows the number of full blocks originally issued for the area and vessel class.
Maximum Full Block Package Size	shows the maximum amount of the TAC that any person in the area could hold given the aggregation limits in the original plan.
Minimum Number of Full Block Packages	shows the minimum possible number of persons holding full blocks after consolidation had gone to its maximum extent.
Average Size of Full Block Packages	shows the average size of the full block packages in column 5 measured in pounds of IFQ in 1991. The average size of a full block package includes some partial block quota shares.
Pct. Area TAC in Full Block Packages	shows the percentage of the TAC in the IPHC management area in full block packages held by operators in the relevant vessel class. Some of this represents partial block QS held by full block holders.

3.2.5 Alt 5: Two Catcher Size Classes, Three Partial

Alternative 5 incorporates the Full/Partial Block proposal into the halibut management plan. In this alternative catcher vessels are divided into two classes: those that are less than or equal to 60 feet and those greater than 60 feet. In addition, any person who does not hold a full block may hold as many as three partial blocks.

The introduction of the two vessel classes does not change the total numbers of partial or full blocks to any great extent.

Allowing a person without full blocks to hold three rather than two partial blocks increases the average size of the partial block packages and reduces the number of separate partial block holders. It does not affect the full block holders and it does not affect the total amounts of QS held by full and partial block holders. An increase in the number of partial blocks a person can hold from two to three tends to reduce the possible minimum number of partial block holders by about a third, and to increase the average size of the partial block holdings by 50% once the minimum number of block holders has been reached.

As noted earlier, the maximum level of consolidation statewide is estimated by taking the highest number of QS holders in any area. In Alternative 5, Area 3A would have the highest number of persons holding QS if the maximum possible aggregation occurred. There would be 743 persons holding partial block packages in the catcher and freezer vessel fleet categories, and there would be 70 persons holding full block packages. Thus the possible minimum number of persons that would be left in the fleet if consolidation reached its limit is 813.

As many as five partial blocks may be fished off of a vessel under this alternative. The possible minimum number of vessels fished in each area and vessel class can be estimated by taking sixty percent of the possible number of partial block holders and adding the number of full block holders. The possible minimum number of active vessels would be 516.

Under the status quo alternative, QS issued to the owners of catcher vessels within a length class must always be fished by vessels within that class. The catcher length classes were, vessels less than or equal to 35 feet, vessels from 36 to 60 feet, and vessels over 60 feet. In contrast, Alternative 5 has two vessel classes: less than or equal to 60 feet, and greater than 60 feet. This provides part of the protection of the vessel classes under the status quo, although it fails to guarantee that QS issued to vessels less than or equal to 35 feet will not be transferred to vessels from 36 to 60 feet, as the status quo does. As under the status quo, QS issued to catcher vessels over 60 feet must continue to be fished by vessels in this size class.

Table 3.2.5-1. Alternative 5: Halibut Partial Block Analysis
Numbers and size of Partial Block packages by area and vessel type.

Alternative 5:
Halibut. 20,000 lb. Full Block Size.
3 Partial Block accumulation limit.
Catcher Vessels <= and > 60 ft. and Freezer Vessels.

Mgmt Area	Vessel Category	Initial Number of Partial Blocks	Minimum Number of Partial Block Packages	Average Size of Partial Block Packages	Percent Area TAC in Partial Block Packages
2C	Catcher <= 60	2,323	539	11,973	87.2
	Catcher > 60	40	11	13,217	2.0
	Unknown/Freezer	8	3	8,085	0.4
3A	Catcher <= 60	2,962	668	15,249	38.3
	Catcher > 60	253	71	23,010	6.1
	Unknown	8	2	2,692	0.0
	Freezer	7	2	6,336	0.0
3B	Catcher <= 60	706	195	15,136	33.5
	Catcher > 60	173	51	24,679	14.3
	Freezer	7	2	29,852	0.7
4A	Catcher <= 60	253	72	11,673	49.4
	Catcher > 60	105	42	19,798	48.9
	Freezer	4	2	14,011	1.6
4B	Catcher <= 60	83	22	13,034	16.9
	Catcher > 60/Freezer	72	15	26,620	23.5
4C	Catcher <= 60	61	17	16,377	46.4
	Catcher > 60/Freezer	21	6	15,864	15.9
4D	Catcher <= 60/ Catcher > 60/ Freezer	66	20	18,880	63.0
4E	Catcher <= 60	152	17	5,477	93.1
	Catcher > 60/ Unknown	3	2	3,448	6.9

Mgmt Area	identifies the IPHC halibut management area.
Vessel Category	identifies the vessel class.
Initial Number of Partial Blocks	shows the number of partial blocks originally issued for the area and vessel class. This number is the number prior to the "sweeping up" of partial blocks under 1,000 pounds.
Minimum Number of Partial Block Packages	shows the minimum possible number of partial block packages after "sweeping up" and other possible consolidation.
Average Size of Partial Block Packages	shows the average size of the partial block packages in column 4 measured in pounds of IFQ in 1991.
Pct. Area TAC in Partial Block Packages	shows the percentage of the TAC in the IPHC management area in partial block packages held by operators in the relevant vessel class. This percentage does not necessarily include all the quota in partial blocks because some full block holders may hold partial blocks.

Table 3.2.5-2. Alternative 5: Halibut Full Block Analysis
Numbers and size of Full Block packages by area and vessel type.

Alternative 5:
Halibut. 20,000 lb. Full Block Size.
Catcher Vessels <= and > 60 ft. and Freezer Vessels.

Mgmt Area	Vessel Category	Initial Number of Full Blocks	Maximum Full Block Package Size	Minimum Number of Full Block Packages	Average Size of Full Block Packages	Percent Area TAC in Full Block Packages
2C	Catcher <= 60	26	74,000	9	72,150	8.8
	Catcher > 60	5	74,000	2	63,782	1.7
	Unknown/Freezer	0	74,000	0	0	0.0
3A	Catcher <= 60	390	214,702	39	214,206	31.4
	Catcher > 60	295	214,702	30	209,757	23.7
	Unknown	0	214,702	0	0	0.0
	Freezer	5	214,702	1	114,851	0.4
3B	Catcher <= 60	77	248,292	7	229,810	18.3
	Catcher > 60	135	248,292	12	233,517	31.8
	Freezer	5	248,292	1	119,375	1.4
4A	Catcher <= 60	0	19,154	0	0	0.0
	Catcher > 60	0	19,154	0	0	0.0
	Freezer	0	19,154	0	0	0.0
4B	Catcher <= 60	8	30,387	8	28,643	13.5
	Catcher > 60/Freezer	29	30,387	29	27,062	46.2
4C	Catcher <= 60	5	23,673	5	23,009	19.2
	Catcher > 60/Freezer	5	23,673	5	22,272	18.6
4D	Catcher <= 60 Catcher > 60/ Freezer	11	20,808	11	20,217	37.0
4E	Catcher <= 60	0	89,279	0	0	0.0
	Catcher > 60/ Unknown	0	89,279	0	0	0.0

Mgmt Area	identifies the IPHC halibut management area.
Vessel Category	identifies the vessel class.
Initial Number of Full Blocks	shows the number of full blocks originally issued for the area and vessel class.
Maximum Full Block Package Size	shows the maximum amount of the TAC that any person in the area could hold given the aggregation limits in the original plan.
Minimum Number of Full Block Packages	shows the minimum possible number of persons holding full blocks after consolidation had gone to its maximum extent.
Average Size of Full Block Packages	shows the average size of the full block packages in column 5 measured in pounds of IFQ in 1991. The average size of a full block package includes some partial block quota shares.
Pct. Area TAC in Full Block Packages	shows the percentage of the TAC in the IPHC management area in full block packages held by operators in the relevant vessel class. Some of this represents partial block QS held by full block holders.

3.2.6 Alt 6: Three Catcher Size Classes, Two Partial

Alternative 6 incorporates the Full/Partial Block proposal into the halibut management plan. In this alternative catcher vessels are divided into three classes: those that are less than or equal to 35 feet, those from 36 to 60 feet, and those greater than 60 feet. In addition, any person who does not hold a full block may hold as many as two partial blocks.

The introduction of the three vessel classes does not change the total numbers of partial or full blocks to any great extent. There are some very small changes due to the fact that people are no longer able to form a few combinations that were once possible when all the blocks could be combined. However, the number of total block packages never changes by more than two or three.

As noted earlier, the maximum level of consolidation statewide is estimated by taking the highest number of QS holders in any area. In Alternative 6, Area 3A would have the highest number of persons holding QS if the maximum possible aggregation occurred. There would be 1,115 persons holding partial block packages in the catcher and freezer vessel fleet categories, and there would be 71 persons holding full block packages. Thus the possible minimum number of persons that would be left in the fleet if consolidation reached its limit would be 1,186.

As many as four partial blocks may be fished off of a vessel under this alternative. The possible minimum number of vessels fished in each area and vessel class can be estimated by taking fifty percent of the possible number of partial block holders and adding the number of full block holders. The possible minimum number of active vessels would be 629.

Alternative 6 has the same vessel classes as Alternatives 1 and 7. Each of these alternatives guarantees that QS issued to vessels less than or equal to 35 feet, from 36 to 60 feet, and above 60 feet will continue to be fished by vessels in the same size class.

Table 3.2.6-1. Alternative 6: Halibut Partial Block Analysis
Numbers and size of Partial Block packages by area and vessel type.

Alternative 6.

Halibut. 20,000 lb. Full Block Size.

2 Partial Block accumulation limit.

Three Catcher Vessel Size Classes and Freezer Vessels.

Mgmt Area	Vessel Category	Initial Number of Partial Blocks	Minimum Number of Partial Block Packages	Average Size of Partial Block Packages	Percent Area TAC in Partial Block Packages
2C	Catcher <= 35	1,315	372	4,844	24.3
	Catcher 36 to 60	1,008	437	10,647	62.9
	Catcher > 60	40	17	8,552	2.0
	Unknown/Freezer	8	3	8,085	0.4
3A	Catcher <= 35	1,559	406	6,067	9.3
	Catcher 36 to 60	1,403	597	12,897	28.9
	Catcher > 60	253	107	15,268	6.1
	Unknown/Freezer	8	2	2,692	0.0
3B	Catcher <= 35	197	69	5,880	4.6
	Catcher 36 to 60	509	224	11,365	28.9
	Catcher > 60	173	77	16,346	14.3
	Freezer	7	3	19,902	0.7
4A	Catcher <= 35	104	36	4,035	8.5
	Catcher 36 to 60	149	70	9,932	40.9
	Catcher > 60	105	57	14,588	48.9
	Freezer	4	2	14,011	1.6
4B	Catcher <= 35	30	12	4,359	3.1
	Catcher 36 to 60	53	22	10,656	13.8
	Catcher > 60/Freezer	72	21	19,015	23.5
4C	Catcher <= 35	34	13	10,641	23.1
	Catcher 36 to 60	27	12	11,714	23.4
	Catcher > 60/Freezer	21	8	11,898	15.9
4D	Catcher 36 to 60/Freezer	66	29	13,021	63.0
4E	Catcher <= 35	143	21	3,049	64.0
	Catcher 36 to 60	9	4	7,270	29.1
	Catcher > 60/Unknown	3	2	3,448	6.9

Mgmt Area

identifies the IPHC halibut management area.

Vessel Category

identifies the vessel class.

Initial Number of Partial Blocks

shows the number of partial blocks originally issued for the area and vessel class. This number is the number prior to the "sweeping up" of partial blocks under 1,000 pounds.

Minimum Number of Partial Block Packages

shows the minimum possible number of partial block packages after "sweeping up" and other possible consolidation.

Average Size of Partial Block Packages

shows the average size of the partial block packages in column 4 measured in pounds of IFQ in 1991.

Pct. Area TAC in Partial Block Packages

shows the percentage of the TAC in the IPHC management area in partial block packages held by operators in the relevant vessel class. This percentage does not necessarily include all the quota in partial blocks because some full block holders may hold partial blocks.

Table 3.2.6-2. Alternative 6: Halibut Full Block Analysis
Numbers and size of Full Block packages by area and vessel type.

Alternative 6.
Halibut. 20,000 lb. Full Block Size.
Three Catcher Vessel Size Classes and Freezer Vessels.

Mgmt Area	Vessel Category	Initial Number of Full Blocks	Maximum Full Block Package Size	Minimum Number of Full Block Packages	Average Size of Full Block Packages	Percent Area TAC in Full Block Packages
2C	Catcher <= 35	0	74,000	0	0	0.0
	Catcher 36 to 60	26	74,000	9	72,026	8.8
	Catcher > 60	5	74,000	2	63,782	1.7
	Unknown/Freezer	0	74,000	0	0	0.0
3A	Catcher <= 35	7	214,702	1	159,319	0.6
	Catcher 36 to 60	383	214,702	39	210,727	30.9
	Catcher > 60	295	214,702	30	209,757	23.7
	Unknown/Freezer	0	214,702	0	0	0.0
3B	Catcher <= 35	0	248,292	0	0	0.0
	Catcher 36 to 60	77	248,292	7	229,810	18.3
	Catcher > 60	135	248,292	12	233,517	31.8
	Freezer	5	248,292	1	119,375	1.4
4A	Catcher <= 35	0	19,154	0	0	0.0
	Catcher 36 to 60	0	19,154	0	0	0.0
	Catcher > 60	0	19,154	0	0	0.0
	Freezer	0	19,154	0	0	0.0
4B	Catcher <= 35	0	30,387	0	0	0.0
	Catcher 36 to 60	8	30,387	8	28,643	13.5
	Catcher > 60/Freezer	29	30,387	29	27,062	46.2
4C	Catcher <= 35	2	23,673	2	22,644	7.5
	Catcher 36 to 60	3	23,673	3	23,087	11.5
	Catcher > 60/Freezer	5	23,673	5	22,272	18.6
4D	Catcher 36 to 60/Freezer	11	20,808	11	20,217	37.0
4E	Catcher <= 35	0	89,279	0	0	0.0
	Catcher 36 to 60	0	89,279	0	0	0.0
	Catcher > 60/Unknown	0	89,279	0	0	0.0

Mgmt Area identifies the IPHC halibut management area.

Vessel Category identifies the vessel class.

Initial Number of Full Blocks shows the number of full blocks originally issued for the area and vessel class.

Maximum Full Block Package Size shows the maximum amount of the TAC that any person in the area could hold given the aggregation limits in the original plan.

Minimum Number of Full Block Packages shows the minimum possible number of persons holding full blocks after consolidation had gone to its maximum extent.

Average Size of Full Block Packages shows the average size of the full block packages in column 5 measured in pounds of IFQ in 1991. The average size of a full block package includes some partial block quota shares.

Pct. Area TAC in Full Block Packages shows the percentage of the TAC in the IPHC management area in full block packages held by operators in the relevant vessel class. Some of this represents partial block QS held by full block holders.

3.2.7 Alt 7: Three Catcher Size Classes, Three Partial

Alternative 7 incorporates the Full/Partial Block proposal into the halibut management plan. In this alternative catcher vessels are divided into three classes: those that are less than or equal to 35 feet, those from 36 to 60 feet, and those greater than 60 feet. In addition, any person who does not hold a full block may hold as many as three partial blocks.

The introduction of the three vessel classes does not change the total numbers of partial or full blocks to any great extent. There are some very small changes due to the fact that people are no longer able to form a few combinations that were once possible when all the blocks could be combined. However, the number of total block packages never changes by more than two or three.

Allowing a person without full blocks to hold three rather than two partial blocks increases the average size of the partial block packages and reduces the number of separate partial block holders. It does not affect the full block holders and it does not affect the total amounts of QS held by full and partial block holders.

As noted earlier, the maximum level of consolidation statewide is estimated by taking the highest number of QS holders in any area. In Alternative 7 Area 3A would have the highest number of persons holding QS if the maximum possible aggregation occurred. There would be 744 persons holding partial block packages in the catcher and freezer vessel fleet categories, and there would be 71 persons holding full block packages. Thus the possible minimum number of persons that would be left in the fleet if consolidation reached its limit would be 815.

As many as five partial blocks may be fished off of a vessel under this alternative. The possible minimum number of vessels fished in each area and vessel class can be estimated by taking sixty percent of the possible number of partial block holders and adding the number of full block holders. The possible minimum number of active vessels would be 518.

Alternative 7 has the same vessel classes as Alternatives 1 and 6. Each of these alternatives guarantees that QS issued to vessels less than or equal to 35 feet, from 36 to 60 feet, and above 60 feet will continue to be fished by vessels in the same size class.

Table 3.2.7-1. Alternative 7: Halibut Partial Block Analysis
Numbers and size of Partial Block packages by area and vessel type.

Alternative 7:
Halibut. 20,000 lb. Full Block Size.
3 Partial Block accumulation limit.
Three Catcher Vessel Size Classes and Freezer Vessels.

Mgmt Area	Vessel Category	Initial Number of Partial Blocks	Minimum Number of Partial Block Packages	Average Size of Partial Block Packages	Percent Area TAC in Partial Block Packages
2C	Catcher <= 35	1,315	248	7,266	24.3
	Catcher 36 to 60	1,008	291	15,989	62.9
	Catcher > 60	40	11	13,217	2.0
	Unknown/Freezer	8	3	8,085	0.4
3A	Catcher <= 35	1,559	271	9,090	9.3
	Catcher 36 to 60	1,403	398	19,346	28.9
	Catcher > 60	253	71	23,010	6.1
	Unknown/Freezer	8	2	2,692	0.0
3B	Catcher <= 35	197	46	8,819	4.6
	Catcher 36 to 60	509	150	16,972	28.9
	Catcher > 60	173	51	24,679	14.3
	Freezer	7	2	29,852	0.7
4A	Catcher <= 35	104	24	6,052	8.5
	Catcher 36 to 60	149	48	14,484	40.9
	Catcher > 60	105	42	19,798	48.9
	Freezer	4	2	14,011	1.6
4B	Catcher <= 35	30	8	6,539	3.1
	Catcher 36 to 60	53	15	15,629	13.8
	Catcher > 60/Freezer	72	15	26,620	23.5
4C	Catcher <= 35	34	9	15,371	23.1
	Catcher 36 to 60	27	8	17,571	23.4
	Catcher > 60/Freezer	21	6	15,864	15.9
4D	Catcher 36 to 60/Freezer	66	20	18,880	63.0
4E	Catcher <= 35	143	14	4,573	64.0
	Catcher 36 to 60	9	3	9,694	29.1
	Catcher > 60/Unknown	3	2	3,448	6.9

Mgmt Area	identifies the IPHC halibut management area.
Vessel Category	identifies the vessel class.
Initial Number of Partial Blocks	shows the number of partial blocks originally issued for the area and vessel class. This number is the number prior to the "sweeping up" of partial blocks under 1,000 pounds.
Minimum Number of Partial Block Packages	shows the minimum possible number of partial block packages after "sweeping up" and other possible consolidation.
Average Size of Partial Block Packages	shows the average size of the partial block packages in column 4 measured in pounds of IFQ in 1991.
Pct. Area TAC in Partial Block Packages	shows the percentage of the TAC in the IPHC management area in partial block packages held by operators in the relevant vessel class. This percentage does not necessarily include all the quota in partial blocks because some full block holders may hold partial blocks.

Table 3.2.7-2. Alternative 7: Halibut Full Block Analysis
Numbers and size of Full Block packages by area and vessel type.

Alternative 7:
Halibut. 20,000 lb. Full Block Size.
Three Catcher Vessel Size Classes and Freezer Vessels.

Mgmt Area	Vessel Category	Initial Number of Full Blocks	Maximum Full Block Package Size	Minimum Number of Full Block Packages	Average Size of Full Block Packages	Percent Area TAC in Full Block Packages
2C	Catcher <= 35	0	74,000	0	0	0.0
	Catcher 36 to 60	26	74,000	9	72,026	8.8
	Catcher > 60	5	74,000	2	63,782	1.7
	Unknown/Freezer	0	74,000	0	0	0.0
3A	Catcher <= 35	7	214,702	1	159,319	0.6
	Catcher 36 to 60	383	214,702	39	210,727	30.9
	Catcher > 60	295	214,702	30	209,757	23.7
	Unknown/Freezer	0	214,702	0	0	0.0
3B	Catcher <= 35	0	248,292	0	0	0.0
	Catcher 36 to 60	77	248,292	7	229,810	18.3
	Catcher > 60	135	248,292	12	233,517	31.8
	Freezer	5	248,292	1	119,375	1.4
4A	Catcher <= 35	0	19,154	0	0	0.0
	Catcher 36 to 60	0	19,154	0	0	0.0
	Catcher > 60	0	19,154	0	0	0.0
	Freezer	0	19,154	0	0	0.0
4B	Catcher <= 35	0	30,387	0	0	0.0
	Catcher 36 to 60	8	30,387	8	28,643	13.5
	Catcher > 60/Freezer	29	30,387	29	27,062	46.2
4C	Catcher <= 35	2	23,673	2	22,644	7.5
	Catcher 36 to 60	3	23,673	3	23,087	11.5
	Catcher > 60/Freezer	5	23,673	5	22,272	18.6
4D	Catcher 36 to 60/Freezer	11	20,808	11	20,217	37.0
4E	Catcher <= 35	0	89,279	0	0	0.0
	Catcher 36 to 60	0	89,279	0	0	0.0
	Catcher > 60/Unknown	0	89,279	0	0	0.0

Mgmt Area	identifies the IPHC halibut management area.
Vessel Category	identifies the vessel class.
Initial Number of Full Blocks	shows the number of full blocks originally issued for the area and vessel class.
Maximum Full Block Package Size	shows the maximum amount of the TAC that any person in the area could hold given the aggregation limits in the original plan.
Minimum Number of Full Block Packages	shows the minimum possible number of persons holding full blocks after consolidation had gone to its maximum extent.
Average Size of Full Block Packages	shows the average size of the full block packages in column 5 measured in pounds of IFQ in 1991. The average size of a full block package includes some partial block quota shares.
Pct. Area TAC in Full Block Packages	shows the percentage of the TAC in the IPHC management area in full block packages held by operators in the relevant vessel class. Some of this represents partial block QS held by full block holders.

3.3 Sablefish

3.3.1 Alt 1: Status Quo

The status quo is the current IFQ program. The expected consequences of this are described in the Supplemental Analysis of March 27, 1992. The Full/Partial Block proposal is a modification of that program.

The maximum consolidation possible under the current IFQ program is determined by a set of aggregation limits in Section 676.22 of the Final Rule.¹⁸ These are:

676.22(e) : Sablefish QS use. No person, individually or collectively, may use an amount of sablefish QS greater than 1 percent (0.01) of the combined total sablefish QS for the Gulf of Alaska and Bering Sea and Aleutian Islands IFQ regulatory areas, unless the amount in excess of 1 percent (0.01) was received in the initial allocation of QS. In the IFQ regulatory area east of 140° west longitude, no person, individually or collectively, may use more than 1 percent (0.01) of the total amount of QS for this area, unless the amount in excess of 1 percent (0.01) was received in the initial allocation of QS.

These aggregation limits imply the area-by-area limits on maximum IFQ holdings summarized in Table 3.3.1-1.

Given these aggregation limits there can be no fewer than 100 sablefish QS holders in the waters off of Alaska. All of these QS holders would have to hold QS in the regulatory area east of 140° west longitude.

Estimates of the minimum numbers possible in each management area are shown in Table 3.3.1-2. These estimates are made by dividing the area TAC by the area aggregation limit and rounding the result up to the nearest whole number. The possible minimum numbers in each area sum to more than the possible number throughout the GOA and BSAI because persons in one area may hold QS in other areas.

The Supplemental Analysis reported that a sablefish model also estimated that "in the extreme," if all the vessels were active full time, an IFQ plan that did not include aggregation limits or vessel class restrictions would have reduced the number of sablefish vessels active in 1989 from 580 to 47.¹⁹ This number is smaller than the number that could actually be reached given the aggregation limits incorporated into the sablefish plan.

¹⁸Federal Register. 58(215). Nov. 9, 1993. 50CFR Part 676.22, subpart e, page 59408.

¹⁹Supplemental Analysis, page 2-10.

Table 3.3.1-1. Binding Area IFQ Limits for Sablefish
1991 TACs

Area	Number of Quota Shares (shares)	Number of Individual Quotas (lbs)	IFQs per share (lbs)	Limit on Share Holdings (shares)	Implied Limit on Individual Quota Holdings (lbs)
Aleutians	27,996,580	5,291,062	.1889	2,892,535	534,753
Bering Sea	14,741,721	3,417,152	.2318	2,829,535	655,890
Central Gulf	100,932,906	18,650,806	.1847	2,892,535	522,853
Western Gulf	31,299,366	5,158,654	.1648	2,895,535	466,354
West Yakutat	48,038,512	8,481,207	.1765	2,895,535	499,555
Southeast Outside	59,944,419	10,368,432	.1729	599,444	103,684

Table 3.3.1-2. Possible Minimum Number of Sablefish Status Quo QS Holders
Estimated Minimums by Management Area

Area	Area TAC	Area Holdings Limit	Potential Minimum Number of Holders
Aleutians	5,291,062	534,753	10
Bering Sea	3,417,152	655,890	6
Central Gulf	18,650,806	522,853	36
Western Gulf	5,158,654	466,354	12
West Yakutat	8,481,207	499,555	17
Southeast Outside	10,368,432	103,684	100

3.3.2 Alt 2: One Catcher Size Class; Two Partial

Alternative 2 incorporates the Full/Partial Block proposal into the sablefish management plan. In this alternative there are no separate catcher vessel size classes and each person who does not hold a full block may hold as many as two partial blocks. The partial block results are summarized in Table 3.3.2-1 and the full block results are summarized in Table 3.3.2-2.

The possible minimum number of QS holders in the GOA and BSAI is estimated by taking the highest number of QS holders in any area. In Alternative 2, the Southeast Outside regulatory district would have the highest number of persons holding QS if the maximum possible aggregation occurred. There would be 209 persons holding partial block packages in the catcher and freezer vessel fleet categories, and there would be 64 persons holding full block packages. Thus the possible minimum number of persons that would be left in the fleet if consolidation reached its limit would be 273.

As many as four partial blocks may be fished off of a vessel under this alternative. The possible minimum number of vessels fished in each area and vessel class can be estimated by taking fifty percent of the possible number of partial block holders and adding the number of full block holders. The possible minimum number of active vessels would be 169.

Under the status quo alternative, QS issued to the owners of catcher vessels within a length class must always be fished by vessels within that class. The catcher length classes were vessels up to and including 60 feet, and vessels over 60 feet. This is not true under Alternative 2. Under this alternative, QS issued to the owners of vessels in one size class can be transferred to the owners of vessels in another size class. While Alternative 2 will guarantee the preservation of block packages of moderate size, through the limit on the number of partial blocks that may be held, it cannot guarantee that these packages will continue to be held by within the same vessel size class.

Table 3.3.2-1. Alternative 2: Sablefish Partial Block Analysis
Numbers and size of Partial Block packages by area and vessel type.

Alternative 2:
Sablefish. 20,000 lb. Full Block Size.
2 Partial Block accumulation limit.
One Catcher Vessel Class and Freezer Vessels.

Mgmt Area	Vessel Category	Initial Number of Partial Blocks	Minimum Number of Partial Block Packages	Average Size of Partial Block Packages	Percent Area TAC in Partial Block Packages
Aleutians	Catcher	108	43	15,307	12.4
	Freezer	29	12	18,126	4.1
Bering Sea	Catcher	122	43	17,436	21.9
	Freezer	31	12	16,839	5.9
Central Gulf	Catcher	598	186	18,038	18.0
	Freezer	26	11	20,593	1.2
Southeast Outside	Catcher	628	206	18,603	37.0
	Freezer	7	3	8,458	0.2
Western Gulf	Catcher	156	59	18,762	21.5
	Freezer	29	11	22,947	4.9
West Yakutat	Catcher	393	134	16,002	25.3
	Freezer	11	4	18,377	0.9

Mgmt Area	identifies the sablefish management area or regulatory district.
Vessel Category	identifies the vessel class.
Initial Number of Partial Blocks	shows the number of partial blocks originally issued for the area and vessel class. This number is the number prior to the "sweeping up" of partial blocks under 3,000 pounds.
Minimum Number of Partial Block Packages	shows the minimum possible number of partial block packages after "sweeping up" and other possible consolidation.
Average Size of Partial Block Packages	shows the average size of the partial block packages in column 4 measured in pounds of IFQ in 1991.
Pct. Area TAC in Partial Block Packages	shows the percentage of the TAC in the management area in partial block packages held by operators in the relevant vessel class. This percentage does not necessarily include all the quota in partial blocks because some full block holders may hold partial blocks.

Table 3.3.2-2. Alternative 2: Sablefish Full Block Analysis
Numbers and size of Full Block packages by area and vessel type.

Alternative 2:
Sablefish. 20,000 lb. Full Block Size.
One Catcher Vessels Size and Freezer Vessels.

Mgmt Area	Vessel Category	Initial Number of Full Blocks	Maximum Full Block Package Size	Minimum Number of Full Block Packages	Average Size of Full Block Packages	Percent Area TAC in Full Block Packages
Aleutians	Catcher	88	534,753	4	455,664	34.4
	Freezer	126	534,753	5	518,539	49.0
Bering Sea	Catcher	65	655,890	3	450,277	39.5
	Freezer	54	655,890	2	557,249	32.6
Central Gulf	Catcher	652	522,853	26	504,754	70.4
	Freezer	96	522,853	4	486,417	10.4
Southeast Outside	Catcher	311	103,684	63	102,158	62.1
	Freezer	3	103,684	1	75,000	0.7
Western Gulf	Catcher	109	466,354	5	444,673	43.1
	Freezer	77	466,354	4	393,975	30.5
West Yakutat	Catcher	290	499,555	13	464,972	71.3
	Freezer	10	499,555	1	218,779	2.6

Mgmt Area	identifies the sablefish management area or regulatory district.
Vessel Category	identifies the vessel class.
Initial Number of Full Blocks	shows the number of full blocks originally issued for the area and vessel class.
Maximum Full Block Package Size	shows the maximum amount of the TAC that any person in the area could hold given the aggregation limits in the original plan.
Minimum Number of Full Block Packages	shows the minimum possible number of persons holding full blocks after consolidation had gone to its maximum extent.
Average Size of Full Block Packages	shows the average size of the full block packages in column 5 measured in pounds of IFQ in 1991. The average size of a full block package includes some partial block quota shares.
Pct. Area TAC in Full Block Packages	shows the percentage of the TAC in the management area in full block packages held by operators in the relevant vessel class. Some of this represents partial block QS held by full block holders.

3.3.3 Alt 3: One Catcher Size Class; Three Partial

Alternative 3 incorporates the Full/Partial Block proposal into the sablefish management plan. In this alternative there are no separate catcher vessel size classes, and each person who does not hold a full block may hold as many as three partial blocks. Of the alternatives reported here, this is the closest to the Full/Partial Block proposal as originally advanced. The main differences between this alternative and the original proposal are the shift in the size of the full blocks from 10,000 to 20,000 pounds of IFQ and the introduction of the sweeping up provision for blocks under 3,000 pounds. The partial block results are summarized in Table 3.3.3-1 and the full block results are summarized in Table 3.3.3-2.

Allowing a person without full blocks to hold three rather than two partial blocks increases the average size of the partial block packages and reduces the number of separate partial block holders. It does not affect the full block holders and it does not affect the total amounts of QS held by full and partial block holders.

An increase from two to three in the number of partial blocks a person can hold tends to reduce the possible minimum number of partial block holders by about a third, and to increase the average size of the partial block holdings by 50% once the minimum number of block holders has been reached.

As noted earlier, the possible minimum number of QS holders in the GOA and BSAI is estimated by taking the highest number of QS holders in any area. In Alternative 3, the Southeast Outside regulatory district would have the highest number of persons holding QS if the maximum possible aggregation occurred. There would be 139 persons holding partial block packages in the catcher and freezer vessel fleet categories, and there would be 64 persons holding full block packages. Thus the possible minimum number of persons that would be left in the fleet if consolidation reached its limit would be 203.

As many as five partial blocks may be fished off of a vessel under this alternative. The possible minimum number of vessels fished in each area and vessel class can be estimated by taking sixty percent of the possible number of partial block holders and adding the number of full block holders. The possible minimum number of active vessels would be 148.

Under the status quo alternative, QS issued to the owners of catcher vessels within a length class must always be fished by vessels within that class. The catcher length classes were vessels less than or equal to 60 feet and vessels over 60 feet. This is not true under Alternative 3. Under this alternative, QS issued to the owners of vessels in one size class can be transferred to the owners of vessels in another size class. While Alternative 3 will guarantee the preservation of block packages of moderate size, through the limit on the number of partial blocks that may be held, it cannot guarantee that these packages will continue to be held within the same vessel class.

Table 3.3.3-1. Alternative 3: Sablefish Partial Block Analysis
Numbers and size of Partial Block packages by area and vessel type.

Alternative 3:
Sablefish. 20,000 lb. Full Block Size.
3 Partial Block accumulation limit.
One Catcher Vessel Class and Freezer Vessels.

Mgmt Area	Vessel Category	Initial Number of Partial Blocks	Minimum Number of Partial Block Packages	Average Size of Partial Block Packages	Percent Area TAC in Partial Block Packages
Aleutians	Catcher	108	29	22,697	12.4
	Freezer	29	8	27,189	4.1
Bering Sea	Catcher	122	29	25,854	21.9
	Freezer	31	8	25,258	5.9
Central Gulf	Catcher	598	124	27,056	18.0
	Freezer	26	8	28,315	1.2
Southeast Outside	Catcher	628	137	27,972	37.0
	Freezer	7	2	12,687	0.2
Western Gulf	Catcher	156	40	27,674	21.5
	Freezer	29	8	31,552	4.9
West Yakutat	Catcher	393	89	24,093	25.3
	Freezer	11	3	24,502	0.9

Mgmt Area identifies the sablefish management area or regulatory district.

Vessel Category identifies the vessel class.

Initial Number of Partial Blocks shows the number of partial blocks originally issued for the area and vessel class. This number is the number prior to the "sweeping up" of partial blocks under 3,000 pounds.

Minimum Number of Partial Block Packages shows the minimum possible number of partial block packages after "sweeping up" and other possible consolidation.

Average Size of Partial Block Packages shows the average size of the partial block packages in column 4 measured in pounds of IFQ in 1991.

Pct. Area TAC in Partial Block Packages shows the percentage of the TAC in the management area in partial block packages held by operators in the relevant vessel class. This percentage does not necessarily include all the quota in partial blocks because some full block holders may hold partial blocks.

Table 3.3.3-2. Alternative 3: Sablefish Full Block Analysis
Numbers and size of Full Block packages by area and vessel type.

Alternative 2:
Sablefish. 20,000 lb. Full Block Size.
One Catcher Vessels Size and Freezer Vessels.

Mgmt Area	Vessel Category	Initial Number of Full Blocks	Maximum Full Block Package Size	Minimum Number of Full Block Packages	Average Size of Full Block Packages	Percent Area TAC in Full Block Packages
Aleutians	Catcher	88	534,753	4	455,664	34.4
	Freezer	126	534,753	5	518,539	49.0
Bering Sea	Catcher	65	655,890	3	450,277	39.5
	Freezer	54	655,890	2	557,249	32.6
Central Gulf	Catcher	652	522,853	26	504,754	70.4
	Freezer	96	522,853	4	486,417	10.4
Southeast Outside	Catcher	311	103,684	63	102,158	62.1
	Freezer	3	103,684	1	75,000	0.7
Western Gulf	Catcher	109	466,354	5	444,673	43.1
	Freezer	77	466,354	4	393,975	30.5
West Yakutat	Catcher	290	499,555	13	464,972	71.3
	Freezer	10	499,555	1	218,779	2.6

Mgmt Area	identifies the sablefish management area or regulatory district.
Vessel Category	identifies the vessel class.
Initial Number of Full Blocks	shows the number of full blocks originally issued for the area and vessel class.
Maximum Full Block Package Size	shows the maximum amount of the TAC that any person in the area could hold given the aggregation limits in the original plan.
Minimum Number of Full Block Packages	shows the minimum possible number of persons holding full blocks after consolidation had gone to its maximum extent.
Average Size of Full Block Packages	shows the average size of the full block packages in column 5 measured in pounds of IFQ in 1991. The average size of a full block package includes some partial block quota shares.
Pct. Area TAC in Full Block Packages	shows the percentage of the TAC in the management area in full block packages held by operators in the relevant vessel class. Some of this represents partial block QS held by full block holders.

3.3.4 Alt 4: Two Catcher Size Classes: Two Partial

Alternative 4 incorporates the Full/Partial Block proposal into the sablefish management plan. In this alternative catcher vessels are divided into two classes: those that are less than or equal to 60 feet and those greater than 60 feet. In addition, any person who does not hold a full block may hold as many as two partial blocks. The partial block results for this alternative are shown in Table 3.3.4-1 and the full block results for this alternative are shown in Table 3.3.4.-2.

The introduction of the two catcher vessel classes does not change the total numbers of partial or full blocks to any great extent. There are some very small changes due to the fact that people are no longer able to form a few combinations that were once possible when all the blocks could be combined across vessel size classes. However, the number of total block packages never changes by more than two or three.

As noted earlier, the possible minimum number of QS holders in the GOA and BSAI is estimated by taking the highest number of QS holders in any area. In Alternative 4, the Southeast Outside regulatory district would have the highest number of persons holding QS if the maximum possible aggregation occurred. There would be 211 persons holding partial block packages in the catcher and freezer vessel fleet categories, and there would be 64 persons holding full block packages. Thus the possible minimum number of persons that would be left in the fleet if consolidation reached its limit would be 275.

As many as four partial blocks may be fished off of a vessel under this alternative. The possible minimum number of vessels fished in each area and vessel class can be estimated by taking fifty percent of the possible number of partial block holders and adding the number of full block holders. The possible minimum number of active vessels would be 170.

Under the status quo alternative, QS issued to the owners of sablefish catcher vessels less than 60 feet must always be fished from catcher vessels less than 60 feet. This is also true for QS issued to catcher vessels greater than 60 feet. This is not true of Alternatives 2 and 3 where there are no vessel classes. In contrast, under Alternative 4 QS issued to the owners of catcher vessels less than 60 feet must always be fished from catcher vessels less than 60 feet. This provides the same protection of the vessel classes as is provided under the status quo.

Table 3.3.4-1. Alternative 4: Sablefish Partial Block Analysis
Numbers and size of Partial Block packages by area and vessel type.

Alternative 4:
Sablefish. 20,000 lb. Full Block Size.
2 Partial Block accumulation limit.
Two Catcher Vessel Size Classes and Freezer Vessels.

Mgmt Area	Vessel Category	Initial Number of Partial Blocks	Minimum Number of Partial Block Packages	Average Size of Partial Block Packages	Percent Area TAC in Partial Block Packages
Aleutians	Catcher <= 60	53	21	14,027	5.6
	Catcher > 60	55	22	16,311	6.8
	Freezer	29	12	18,126	4.1
Bering Sea	Catcher <= 60	71	24	16,635	11.7
	Catcher > 60	51	19	18,294	10.2
	Freezer	31	12	16,839	5.9
Central Gulf	Catcher <= 60	433	130	16,569	11.5
	Catcher > 60	159	56	20,982	6.3
	Unknown	6	3	5,805	0.1
	Freezer	26	11	20,593	1.2
Southeast Outside	Catcher <= 60	562	183	18,536	32.7
	Catcher > 60	55	21	20,058	4.1
	Unknown	11	4	7,352	0.3
	Freezer	7	3	8,458	0.2
Western Gulf	Catcher <= 60	95	34	18,505	12.2
	Catcher > 60	61	25	18,352	8.9
	Freezer	29	11	22,947	4.9
West Yakutat	Catcher <= 60	289	91	14,429	15.5
	Catcher > 60	101	42	19,500	9.7
	Unknown	3	2	5,379	0.1
	Freezer	11	4	18,377	0.9

Mgmt Area	identifies the sablefish management area or regulatory district.
Vessel Category	identifies the vessel class.
Initial Number of Partial Blocks	shows the number of partial blocks originally issued for the area and vessel class. This number is the number prior to the "sweeping up" of partial blocks under 3,000 pounds.
Minimum Number of Partial Block Packages	shows the minimum possible number of partial block packages after "sweeping up" and other possible consolidation.
Average Size of Partial Block Packages	shows the average size of the partial block packages in column 4 measured in pounds of IFQ in 1991.
Pct. Area TAC in Partial Block Packages	shows the percentage of the TAC in the management area in partial block packages held by operators in the relevant vessel class. This percentage does not necessarily include all the quota in partial blocks because some full block holders may hold partial blocks.

Table 3.3.4-2. Alternative 4: Sablefish Full Block Analysis
Numbers and size of Full Block packages by area and vessel type.

Alternative 4:
Sablefish. 20,000 lb. Full Block Size.
Two Catcher Vessel Size Classes and Freezer Vessels.

Mgmt Area	Vessel Category	Initial Number of Full Blocks	Maximum Full Block Package Size	Minimum Number of Full Block Packages	Average Size of Full Block Packages	Percent Area TAC in Full Block Packages
Aleutians	Catcher <= 60	25	534,753	1	519,996	9.8
	Catcher > 60	63	534,753	3	435,822	24.7
	Freezer	126	534,753	5	518,539	49.0
Bering Sea	Catcher <= 60	19	655,890	1	398,805	11.7
	Catcher > 60	46	655,890	2	477,478	27.9
	Freezer	54	655,890	2	557,249	32.6
Central Gulf	Catcher <= 60	346	522,853	14	498,158	37.4
	Catcher > 60	306	522,853	12	513,166	33.0
	Unknown	0	522,853	0	0	0.0
	Freezer	96	522,853	4	486,417	10.4
Southeast Outside	Catcher <= 60	251	103,684	51	101,913	50.1
	Catcher > 60	60	103,684	12	102,315	11.8
	Unknown	0	103,684	0	0	0.0
	Freezer	3	103,684	1	75,000	0.7
Western Gulf	Catcher <= 60	38	466,354	2	392,798	15.2
	Catcher > 60	71	466,354	4	364,193	28.2
	Freezer	77	466,354	4	393,975	30.5
West Yakutat	Catcher <= 60	148	499,555	7	441,787	36.5
	Catcher > 60	142	499,555	6	492,270	34.8
	Unknown	0	499,555	0	0	0.0
	Freezer	10	499,555	1	218,779	2.6

Mgmt Area	identifies the sablefish management area or regulatory district.
Vessel Category	identifies the vessel class.
Initial Number of Full Blocks	shows the number of full blocks originally issued for the area and vessel class.
Maximum Full Block Package Size	shows the maximum amount of the TAC that any person in the area could hold given the aggregation limits in the original plan.
Minimum Number of Full Block Packages	shows the minimum possible number of persons holding full blocks after consolidation had gone to its maximum extent.
Average Size of Full Block Packages	shows the average size of the full block packages in column 5 measured in pounds of IFQ in 1991. The average size of a full block package includes some partial block quota shares.
Pct. Area TAC in Full Block Packages	shows the percentage of the TAC in the management area in full block packages held by operators in the relevant vessel class. Some of this represents partial block QS held by full block holders.

3.3.5 Alt 5: Two Catcher Size Classes: Three Partial

Alternative 5 incorporates the Full/Partial Block proposal into the sablefish management plan. In this alternative catcher vessels are divided into two classes: those that are less than or equal to 60 feet and those greater than 60 feet. In addition, any person who does not hold a full block may hold as many as three partial blocks. The partial block results for this alternative may be found in Table 3.3.5-1 and the full block results may be found in Table 3.3.5-2.

The introduction of the two vessel classes does not change the total numbers of partial or full blocks to any great extent. There are some very small changes due to the fact that people are no longer able to form a few combinations that were once possible when all the blocks could be combined. However the number of total block packages never changes by more than two or three.

Allowing a person without full blocks to hold three rather than two partial blocks increases the average size of the partial block packages and reduces the number of separate partial block holders. It does not affect the full block holders and it does not affect the total amounts of QS held by full and partial block holders.

An increase in the number of partial blocks a person can hold from two to three tends to reduce the possible minimum number of partial block holders by about a third, and to increase the average size of the partial block holdings by 50% once the minimum number of block holders has been reached.

As noted earlier, the possible minimum number of QS holders in the GOA and BSAI is estimated by taking the highest number of QS holders in any area. In Alternative 5, the Southeast Outside regulatory district would have the highest number of persons holding QS if the maximum possible aggregation occurred. There would be 141 persons holding partial block packages in the catcher and freezer vessel fleet categories, and there would be 64 persons holding full block packages. Thus the possible minimum number of persons that would be left in the fleet if consolidation reached its limit would be 205.

As many as five partial blocks may be fished off of a vessel under this alternative. The possible minimum number of vessels fished in each area and vessel class can be estimated by taking sixty percent of the possible number of partial block holders and adding the number of full block holders. The possible minimum number of active vessels would be 149.

Under the status quo alternative, QS issued to the owners of catcher vessels less than 60 feet must always be fished from catcher vessels less than 60 feet. This is also true for QS issued to catcher vessels over 60 feet. Alternative 5 has the same catcher vessel size classes as the status quo.

Table 3.3.5-1. Alternative 5: Sablefish Partial Block Analysis
Numbers and size of Partial Block packages by area and vessel type.

Alternative 5:
Sablefish. 20,000 lb. Full Block Size.
3 Partial Block accumulation limit.
Two Catcher Vessel Size Classes and Freezer Vessels.

Mgmt Area	Vessel Category	Initial Number of Partial Blocks	Minimum Number of Partial Block Packages	Average Size of Partial Block Packages	Percent Area TAC in Partial Block Packages
Aleutians	Catcher <= 60	53	14	21,040	5.6
	Catcher > 60	55	15	23,923	6.8
	Freezer	29	8	27,189	4.1
Bering Sea	Catcher <= 60	71	16	24,952	11.7
	Catcher > 60	51	13	26,737	10.2
	Freezer	31	8	25,258	5.9
Central Gulf	Catcher <= 60	433	87	24,759	11.5
	Catcher > 60	159	38	30,920	6.3
	Unknown	6	2	8,708	0.1
	Freezer	26	8	28,315	1.2
Southeast Outside	Catcher <= 60	562	122	27,804	32.7
	Catcher > 60	55	14	30,087	4.1
	Unknown	11	3	9,803	0.3
	Freezer	7	2	12,687	0.2
Western Gulf	Catcher <= 60	95	23	27,355	12.2
	Catcher > 60	61	17	26,988	8.9
	Freezer	29	8	31,552	4.9
West Yakutat	Catcher <= 60	289	61	21,526	15.5
	Catcher > 60	101	28	29,249	9.7
	Unknown	3	1	10,758	0.1
	Freezer	11	3	24,502	0.9

Mgmt Area	identifies the sablefish management area or regulatory district.
Vessel Category	identifies the vessel class.
Initial Number of Partial Blocks	shows the number of partial blocks originally issued for the area and vessel class. This number is the number prior to the "sweeping up" of partial blocks under 3,000 pounds.
Minimum Number of Partial Block Packages	shows the minimum possible number of partial block packages after "sweeping up" and other possible consolidation.
Average Size of Partial Block Packages	shows the average size of the partial block packages in column 4 measured in pounds of IFQ in 1991.
Pct. Area TAC in Partial Block Packages	shows the percentage of the TAC in the management area in partial block packages held by operators in the relevant vessel class. This percentage does not necessarily include all the quota in partial blocks because some full block holders may hold partial blocks.

Table 3.3.5-2. Alternative 5: Sablefish Full Block Analysis
Numbers and size of Full Block packages by area and vessel type.

Alternative 5:
Sablefish. 20,000 lb. Full Block Size.
Two Catcher Vessel Size Classes and Freezer Vessels.

Mgmt Area	Vessel Category	Initial Number of Full Blocks	Maximum Full Block Package Size	Minimum Number of Full Block Packages	Average Size of Full Block Packages	Percent Area TAC in Full Block Packages
Aleutians	Catcher <= 60	25	534,753	1	519,996	9.8
	Catcher > 60	63	534,753	3	435,822	24.7
	Freezer	126	534,753	5	518,539	49.0
Bering Sea	Catcher <= 60	19	655,890	1	398,805	11.7
	Catcher > 60	46	655,890	2	477,478	27.9
	Freezer	54	655,890	2	557,249	32.6
Central Gulf	Catcher <= 60	346	522,853	14	498,158	37.4
	Catcher > 60	306	522,853	12	513,166	33.0
	Unknown	0	522,853	0	0	0.0
	Freezer	96	522,853	4	486,417	10.4
Southeast Outside	Catcher <= 60	251	103,684	51	101,913	50.1
	Catcher > 60	60	103,684	12	102,315	11.8
	Unknown	0	103,684	0	0	0.0
	Freezer	3	103,684	1	75,000	0.7
Western Gulf	Catcher <= 60	38	466,354	2	392,798	15.2
	Catcher > 60	71	466,354	4	364,193	28.2
	Freezer	77	466,354	4	393,975	30.5
West Yakutat	Catcher <= 60	148	499,555	7	441,787	36.5
	Catcher > 60	142	499,555	6	492,270	34.8
	Unknown	0	499,555	0	0	0.0
	Freezer	10	499,555	1	218,779	2.6

Mgmt Area	identifies the sablefish management area or regulatory district.
Vessel Category	identifies the vessel class.
Initial Number of Full Blocks	shows the number of full blocks originally issued for the area and vessel class.
Maximum Full Block Package Size	shows the maximum amount of the TAC that any person in the area could hold given the aggregation limits in the original plan.
Minimum Number of Full Block Packages	shows the minimum possible number of persons holding full blocks after consolidation had gone to its maximum extent.
Average Size of Full Block Packages	shows the average size of the full block packages in column 5 measured in pounds of IFQ in 1991. The average size of a full block package includes some partial block quota shares.
Pct. Area TAC in Full Block Packages	shows the percentage of the TAC in the management area in full block packages held by operators in the relevant vessel class. Some of this represents partial block QS held by full block holders.

3.4 Costs, Benefits, and Distributional Impacts

A major objective of the current IFQ plan is to increase the net economic benefits derived from Alaska's halibut and sablefish fisheries. Estimates made in previous Council documents suggest that the net benefits resulting from the program will be large.²⁰

Nevertheless, the IFQ program clearly has additional objectives. Provisions in the current plan seek to balance the objective of increasing net economic benefits with the objective of preserving the composition and diversity of the current fleet.

For example, the current plan includes catcher vessel classes and a freezer-longliner class and established rules that QS initially allocated to each vessel class cannot be transferred to another class. The current plan also includes QS ownership caps which may further limit consolidation.

The Full/Partial Block proposal addresses fears that the current plan does not go far enough to preserve the present composition and diversity of the fleet. The Full/Partial Block proposal may have implications for fleet consolidation, fleet diversity, and the net economic benefits, which would be produced by the IFQ program.

This section briefly discusses ways the Full/Partial Block proposal might change the net economic benefits that would be produced by the current program. The proposal may affect costs and benefits in several ways, but the actual amounts of change are hard to estimate. Because of this, this section gives a qualitative description of the possible changes rather than a quantitative description of their amounts. The Full/Partial Block proposal may affect the costs of voluntary QS transactions, the costs of program administration, and the costs of fish harvesting.

3.4.1 Administrative Costs and Benefits

The Full/Partial Block proposal may add additional conditions which will make it harder to start the IFQ program before all qualifying pound appeals are resolved. QS cannot be put into blocks until qualifying pounds are known. Full block sizes cannot be calculated precisely until all qualifying pounds are known. The QS equivalent of the largest block size allowed under the "sweeping up" provisions cannot be calculated precisely until all qualifying pounds are known. QS transfers could not occur until the amount which belongs in the block is known.

The Full/Partial Block proposal may change the administrative and enforcement costs of the IFQ program. It is hard, however, to predict the direction of the change. The need to monitor additional constraints may increase such costs. Enforcement and administrative costs may also increase if more fishing operations remain in the fishery. However, other aspects of the proposal may decrease costs.

Under some variants of the Full/Partial proposal it will no longer be necessary to assign catcher vessels to vessel length classes. This will simplify the rules and regulations governing the initial allocation of QS. Since vessel length data will no longer be as important, less care will be needed in editing the vessel length field on vessel licensing and documentation records. There will not be a need for administrative hearings to resolve questions of vessel length classifications. Elimination of catcher vessel length classes should tend to reduce the cost of initial allocations.

²⁰See Supplemental Analysis of the Individual Fishing Quota Management Alternative For Fixed Gear Sablefish And Halibut Fisheries - Gulf of Alaska and Bering Sea/Aleutian Islands, Sections 2.2 through 2.2.31.

The costs of administering transfers may also be reduced. If it is harder and costlier for fishermen to find and purchase (or sell) QS, there may be fewer transfers with the Full/Partial Block proposal than without them. If NMFS's administrative costs increase with each transfer, then administrative costs associated with transfers may fall if the amendment results in a lower volume of transfers.

Alternatively, transfer administration costs may not be reduced, but transfer enforcement may become more effective. NMFS currently plans to check a sample of transfers for violations of the Council's transfer restrictions. Dave Flannagan, Special Agent in Charge (NMFS Office of Enforcement), has indicated that fewer transfers will not lower transfer enforcement costs, but will allow NMFS to examine a higher percentage of the transfers and improve enforcement of transfer restrictions.²¹

If it reduces consolidation, the Full/Partial Block proposal may increase variable enforcement costs or reduce the extent to which the average QS holder's activities are checked.²² For example, one element of the enforcement program is random boardings and checks at sea and in port. Unless funding is increased, an increase in the number of fishermen means a decrease in the probability that any one fisherman will be checked during a year. Vessels may also be required to report projected arrival times in port when they return from a trip. With more vessels, NMFS would have to log a larger number of these reports.

If the Full/Partial Block proposal eliminates catcher vessel size classes, then the mix of monitoring responsibilities would change. The implications for costs are hard to estimate. NMFS would no longer have to be concerned about the actual length of a vessel and would not have to monitor landings and landing records to make sure that a person's IFQ was being used with a vessel of appropriate size. On the other hand, it would now be necessary to monitor block holdings in addition to monitoring aggregate IFQ and QS holdings. NMFS would have to make sure that no person with a full block package in an area owned more than one partial block in that area during a year, and that no one with a partial block package in an area owned more than two or three (depending on the rules) partial blocks in that area during a year.

The Full/Partial Block proposal may change administrative and enforcement costs, or the tasks involved, relative to the current plan. Nevertheless, it is hard to predict whether the net impact on administrative and enforcement costs will be positive or negative.

3.4.2 Search and Transaction Costs

Under the current plan, persons may permanently sell any part of their QS holdings. This "divisibility" of QS holdings should help reduce search costs (the costs of finding a willing buyer or seller with the desired amount of QS) and transactions costs (the costs of negotiating and completing a transfer) for fishermen seeking to buy or sell QS.

Every QS is the same, for a given area and vessel class, under the plan. A fisherman who wants to buy a certain amount of QS could buy a part of the amount from any willing QS holder. Likewise a fisherman who wants to sell a certain amount of QS could sell parts of the amount to many different buyers.

²¹Personal communication with Dave Flannagan, NMFS, Juneau.

²²For a description of current monitoring and enforcement plans see Section 5.4 of the Supplemental Analysis.

The divisibility of QS holdings and the homogeneity of QS for an area and vessel class should facilitate permanent transfers and reduce search and transaction costs. The current IFQ plan serves that function.

In contrast, many fishermen will probably have higher search and transactions costs within an area under the Full/Partial Block proposal than under the current plan. Full and partial blocks will not be divisible. Although the full blocks will be homogeneous, each partial block will be unique since each will provide the right to a different amount of QS and IFQ.²³

Under these conditions, a fisherman who wants to increase his holdings by a certain amount of QS must search for sellers with a block or blocks of about the right amount. When the fisherman already holds the maximum number of partial blocks for an area, he will have to sell one block before he can buy another in that area. He must then find a block to buy that contains the amount of QS he just sold, plus the amount by which he wants to increase his holdings.

These increases in search and transactions costs would be absorbed by holders of QS who try to make exchanges to alter their holdings. While QS brokers and other intermediaries will likely emerge to reduce these costs and facilitate transfers, these costs will probably be higher than under the current program. Since the large blocks are homogeneous, while the partial blocks are not, these search and transactions cost increases may be larger for the smaller operators than for operators large enough to use full blocks.

The results in this report suggest that the increase in search and transactions costs will be relatively greater in the halibut fishery than in the sablefish fishery. The reason is that a greater proportion of the QS and IFQs will be held by partial block holders in the halibut fishery than in the sablefish fishery. For example, in IPHC Area 2C, corresponding to the waters in and off of Southeast Alaska, the Full/Partial Block alternatives with no catcher vessel classes, put about 90% of the TAC in partial block packages. For sablefish in Southeast outside regulatory district only 37% of the TAC is in partial block packages.²⁴

The Full/Partial Block proposal may have smaller search and transactions costs than the Sitka Block proposal. For one reason, the full blocks will be homogeneous. In addition, the Sitka Block proposal will create some very large blocks that cannot be "broken up" for transfer purposes. Some of these large blocks may be hard to trade. Marcus Hartley, staff economist with the Council has suggested that purchases of large blocks may prove to be more difficult to finance than would purchases of smaller blocks.²⁵ This potential problem is mitigated under the Full/Partial Block proposal where the largest blocks are full blocks of 20,000 pounds. Larger allocations that might be issued as a single block under the Sitka Block proposal are broken up into 20,000 pound full blocks (and one partial block) under the Full/Partial Block proposal.

While increased search and transactions costs under the Full/Partial Block program will reduce the net benefits generated by the IFQ program, the actual magnitude of these costs and the reduction

²³The Full/Partial Block proposal probably will not increase search and transaction costs as much as the Sitka Block proposal because of the homogeneity of the full blocks within an area.

²⁴See Tables 3.2.2-1 and 3.3.2-1.

²⁵Hartley also notes that such problems might lower the price per unit of quota for large blocks. Personal communication with Marcus Hartley, NPFMC.

in the net benefits are hard to estimate. This loss in net benefits must also be balanced against the other potential gains in net benefits and/or the distributional objectives of the Council.

3.4.3 Fish Harvesting Costs

The Supplemental Analysis indicates that the IFQ programs for halibut and sablefish are expected to produce net benefits in the harvesting sector. Many of the benefits of the IFQ programs are expected to come when halibut and sablefish TACs are taken with fewer people and less equipment. These persons and equipment will be used to produce other goods and services with no decrease in the amounts of halibut and sablefish produced. The increase in the goods and services produced will be an important benefit from the program. In addition, benefits are expected from the production of higher quality, more valuable, halibut and sablefish products.²⁶

These benefits are expected since the IFQ plan should more adequately specify property rights in the fishery and create incentives to use resources efficiently. The Council hopes that IFQs will help reduce the costs associated with the "race for the fish" and will create an environment in which fishermen can find the most profitable ways to harvest and market their halibut and sablefish.

An IFQ program should give fishermen more in-season flexibility with respect to the timing of their harvest and use of their IFQs even if the shares are not transferable. However, transferable shares and a free market create incentives for resources to flow to their highest-valued use. Fishermen who can use the QS relatively more profitably can be expected to buy them from fishermen who would use them less profitably.

As noted earlier, the current program represents a mix of economic efficiency and distributional objectives. While rights to permanently transfer QS exist under the program, many constraints remain on such transfers. Ownership caps restrict the amounts of QS which can be held by a person. There are also caps on the amount of QS which can be fished from a vessel and restrictions on transferring QS across vessel classes.

All of these restrictions were included to constrain the amount of consolidation that can occur and to help preserve some of the fleet's current diversity. Nevertheless, previous Council analyses suggest that there may be a considerable consolidation of QS under an IFQ program with unrestricted transferability.²⁷ The maximum possible consolidation of QS under the IFQ plan was discussed in Sub-sections 3.2.1 and 3.3.1.

The Full/Partial Block proposal is meant to constrain the extent of this consolidation even more. Whether it will do so can't be determined with certainty since the available economic models of the fishing operations are not good enough to make reliable predictions. However, the tables in other parts of this analysis show that the Full/Partial Block proposal constrains the maximum possible consolidation more than the aggregation limits currently in the plan. Rough estimates of the maximum possible consolidation under the Full/Partial Block proposal are provided in Sections 3.2 and 3.3.

²⁶For discussion of these sources of benefits see Supplemental Analysis, sections 2.2.1 to 2.2.2 and 2.2.4 to 2.2.12.

²⁷See Supplemental Analysis, Chapter 2.0.

If the Full/Partial Block proposal prevents the fleet from consolidating as much as it would under the status quo, it will increase the costs of harvesting the annual allowable catches, and to that extent reduce the economic benefits the program would otherwise have produced.

In the original Full/Partial Block proposal, catcher vessel classes would be eliminated. Thus transfers of QS and IFQs across vessel classes would be allowed. The current plan does not allow such transfers. The fact that blocks can be bought and sold across vessel classes may offset some of the increase in costs caused by reduced consolidation. However, some of the Full/Partial block variants do contain restrictions on transfers across vessel classes.

The Full/Partial Block proposal won't eliminate all of the fish harvesting benefits of IFQs. There will probably be a reduction in the numbers of operations used to harvest the TACs. The remaining operations are likely to operate more cost effectively since much of the competitive race for the fish that exists under open access will be ended. Elimination of the vessel classes may permit further efficiency gains. For these reasons the IFQ programs are likely to lead to a less costly harvest, even with the Full/Partial Block proposal, than the existing open access fishery.

3.4.4 Distributional Consequences

As noted earlier, the Council had goals in addition to increasing economic benefits when it designed the IFQ management plan. That plan included elements that prevented the maximization of economic net benefits, but that helped to preserve the composition and diversity of the existing fishing fleet. While the Full/Partial Block proposal may reduce the net benefits from the IFQ program, it also has been designed to advance other social objectives. Hegge's letter indicates that he expects his proposal to protect small vessel operators, crewmembers, communities, and new entrants, better than the current Council plan.

The Full/Partial Block proposal is designed to preserve large numbers of small operators by limiting the ability of persons to consolidate small QS holdings. QS holders may have up to two or three partial blocks in each area, depending on the alternative chosen. If a three partial block alternative was chosen the three partial blocks in an area would always be worth less than 60,000 pounds of IFQ in the implementation year (3 partial blocks, each less than the 20,000 lb. full block size). Partial blocks could be accumulated across areas up to the current plan's aggregation limits, or until the holder had three partial blocks in each area.

The actual distributive implications of the Full/Partial Block proposal are hard to ascertain. It may be helpful to summarize some of the arguments. Much of this discussion has been drawn from a similar debate taking place over the Sitka Block proposal.

The Full/Partial Block proposal is an attempt to advance the goals of the Sitka Block proposal, while causing fewer problems for large operators. Among other things, proponents of the Sitka Block proposal have argued that it would:

1. Ensure the continued existence of a relatively large, diverse fleet.
2. Provide protection to coastal communities. Because small boats tend to be locally based, traditional delivery patterns will continue.
3. Provide an entry level fishery accessible to deckhands and other small, independent operators.

Dr. Joe Terry, an economist with the NMFS Alaska Fisheries Science Center, has discussed some of these issues in the context of the Sitka Block proposal.²⁸ Some of his points may have relevance to the Full/Partial Block proposal. Two of these are:

1. Although the price of a small partial block may be less than the price of a large block, the price per pound of QS will not necessarily be less with small blocks. Dr. Terry notes that the price per pound of particular block sizes will depend on supply and demand. He argues that if small blocks are in heavy demand by salmon trollers and other fixed gear fishermen, so that they can market their bycatch of halibut and sablefish, then the price per pound for small blocks might be higher than the price per pound of large blocks.
2. If vessel categories are removed, it is not clear that the proposal provides more protection for small vessels than the current plan. Under the current plan, the QS which are initially allocated remain within the vessel class. If vessel classes are removed under a block proposal, large vessels could purchase the QS of smaller vessels.

If the program constrains consolidation and increases the transactions costs of buying and selling QS, the present value of a QS may be reduced and the price per share may be lower than it would be under the status quo. This will decrease the value of the QS to their initial recipients and reduce its usefulness as collateral to finance future expansion. The wealth of initial recipients may be less than under the status quo. Subsequent buyers will pay less to get into the fishery but the present value of the QS to them would also be lower.

3.4.5 Executive Order 12866

Executive Order 12866 requires that the Full/Partial Block proposed amendment be analyzed as to whether it is a "significant" action. As noted above, a "significant regulatory action" is defined as one likely to result in:

1. an annual effect on the economy of \$100 million or more;
2. an adverse effect in a material way on the economy, a sector of the economy, productivity, competition, jobs, the environment, public health, or safety, or State, local, or tribal governments or communities; or
3. a novel legal or policy issue.

The Supplemental Analysis indicated that the current IFQ plan would have an effect on costs, prices, competition, employment, investment, and productivity but that the plan was not expected to have an annual effect of over \$100 million. The Supplemental Analysis forecast that the current IFQ program would produce a large increase in net economic benefits, but that predicted increase was also less than \$100 million per year.

²⁸See Joe Terry's memorandum to Jay Ginter (dated May 7, 1991) in Part I, Appendix II. Dr. Terry's discussion covers economic efficiency, equity, and other distributional issues.

An IFQ program with a Full/Partial Block amendment should still produce substantial net economic benefits relative to an open access fishery. Even if QS transferability was entirely eliminated, the in-season efficiency benefits of eliminating the derby-style fishery would be substantial. Costs associated with the "race for the fish" would still be greatly reduced.

Eliminating the "race for the fish" is also expected to improve public health and safety in these fisheries as fishermen will no longer be forced to fish during brief openings in poor weather. This will be true under the Full/Partial Block proposed amendment as it is true under the current IFQ program.

The Full/Partial Block proposal would also have effects on costs, prices, competition, employment, investment, and productivity. However, it is unlikely that such an amendment would result in annual effects of over \$100 million relative to the current plan.

A Full/Partial Block proposed amendment should not have an adverse effect on State, local, tribal governments, or communities. The Full/Partial Block proposal should not have an adverse effect on the environment. As discussed in Chapter 2.0, the Full/Partial Block proposed amendment is not expected to have significant impacts under NEPA.

Many aspects of the current plan are preserved and large gains in net benefits should be generated relative to an open access fishery. Therefore, the Full/Partial Block proposal should not be considered "significant" under Executive Order 12866.



4.0 INITIAL REGULATORY FLEXIBILITY ANALYSIS

The objective of the Regulatory Flexibility Act is to require consideration of the capacity of those affected by regulations to bear the direct and indirect costs of regulation. If an action will have a significant impact on a substantial number of small entities an Initial Regulatory Flexibility Analysis (IRFA) must be prepared to identify the need for the action, alternatives, potential costs and benefits of the action, the distribution of these impacts, and a determination of net benefits. As discussed below, the Full/Partial Block proposal is unlikely to have a "significant" impact on a substantial number of small entities. An IRFA is therefore unnecessary.

NMFS has defined all fish-harvesting businesses that are independently owned and operated, not dominant in their field of operation, and with annual receipts not in excess of \$2,000,000 as "small businesses." A "substantial number" would in general be 20% of the total number affected by the regulation. A regulation has a "significant impact" on these small businesses if it results in a reduction in annual gross revenues by more than 5%, annual compliance costs that increase total costs of production by more than 5%, or compliance costs for small entities that are at least 10% higher than compliance costs as a percent of sales for large entities.

All the persons who would initially be issued QS under the halibut and sablefish plans would be affected by the Full/Partial Block proposal. This includes an estimated 5,484 halibut QS holders and an estimated 1,121 sablefish QS holders. Almost all of these operations are independently owned and operated, not dominant in their field of operation, and have annual receipts less than \$2,000,000. Virtually all of them are thus small businesses according to accepted NMFS definitions.²⁹ Since the action would affect almost all of these businesses, it would affect a "substantial" number of them.

The economic effects on these fishermen were described at length in Section 3.4 of the preceding chapter and are only summarized briefly here. All initial QS recipients would be affected by the block proposal. The analysis suggests that the block proposal may increase the transactions costs of buying and selling QS for fishermen using partial blocks and may, if it tends to increase the number of operations left in the fishery, increase the aggregate costs of exploiting the fishery and reduce the aggregate profits from fishing. There is a possibility, however, that Full/Partial block alternatives which eliminate vessel class restrictions on QS use will allow fishermen to exploit the fishery more profitably than under the status quo. Initial recipients who would sell in either case may find that changes in prospective costs and revenues lead to changes in QS prices.

These impacts do not appear to be significant within the meaning of the act. They are not likely to lead to a reduction in the gross revenues received by the small business sector of the fleet, although if they lead to an increase in the number of separate operations they may reduce the average gross revenues within the sector. While the proposal may increase the costs of buying and selling QS, particularly for persons dealing with partial blocks, there is no reason to believe that these transactions costs will be as large as 5% of the average operation's total costs of production during the period the shares are held. Since almost all the operations within the fleet are small businesses within the meaning of the act, there will be no differential compliance cost impact between the small and large business sectors.

²⁹Supplemental Analysis, page 7-7.



5.0 SUMMARY AND CONCLUSIONS

5.1 Halibut results

As shown in Table 5.1-1, each of the Full/Partial Block alternatives reduces the possible consolidation considerably. The possible minimum number of persons holding blocks to fish halibut off of the State of Alaska under the least restrictive Full/Partial alternative is more than four times the possible minimum number under the status quo. It is important to remember, however, that this comparison only indicates the strength of the minimum number "guarantees" associated with the different alternatives and does not provide a measure of the actual changes in consolidation.

Table 5.1-1. Maximum Possible Halibut Consolidation
Possible minimum numbers of block holders by alternative

Alternative	Description	Possible Minimum
1	Status Quo	200
2	one catcher class, two partials	1,183
3	one catcher class, three partials	812
4	two catcher classes, two partials	1,184
5	two catcher classes, three partials	813
6	three catcher classes, two partials	1,186
7	three catcher classes, three partials	815

Changes in the number of partial blocks a person can hold affect the number of persons left holding partial blocks and affect the average size of the partial block holdings. They do not affect the proportion of the QS held by persons who do not hold full blocks and they do not affect full block holders in any way.

Changes in the number of catcher vessel classes have a negligible affect on the possible minimum numbers of persons holding QS within a fishing area. The addition of catcher vessel classes does add a further guarantee that the number of QS holders in a given vessel class will not drop below a given limit, and that the amount of QS held by persons in that vessel class will never change.

The analysis suggests that the block proposal may increase the cost to small fishermen of buying and selling QS and may, if it tends to increase the number of operations left in the fishery, increase the aggregate costs of exploiting the fishery and reduce the aggregate profits from fishing. There is a possibility, however, that Full/Partial block alternatives which eliminate vessel class restrictions on QS use will allow for some profitable consolidations that cannot occur under the status quo.

5.2 Sablefish results

As shown in Table 5.2-1, each of the Full/Partial Block alternatives reduces the possible consolidation considerably. The possible minimum number of persons holding blocks to fish sablefish off of the State of Alaska under the least restrictive Full/Partial alternative is more than two times the possible minimum number under the status quo. It is important to remember, however, that this comparison only indicates the strength of the minimum number "guarantees" associated with the different alternatives and does not provide a measure of actual consolidation.

Table 5.2-1. Maximum Possible Sablefish Consolidation
Possible minimum numbers of block holders by alternative

Alternative	Description	Possible Minimum
1	Status Quo	100
2	one catcher class, two partials	273
3	one catcher class, three partials	203
4	two catcher classes, two partials	275
5	two catcher classes, three partials	205

Changes in the number of partial blocks a person can hold affect the number of persons left holding partial blocks and affect the average size of the partial block holdings. They do not affect the proportion of the QS held by persons who do not hold full blocks and they do not affect full block holders in any way.

Changes in the number of catcher vessel classes have a negligible affect on the possible minimum numbers of persons holding QS within a fishing area. The addition of catcher vessel classes does add a further guarantee that the number of QS holders in a given vessel class will not drop below a given limit, and that the amount of QS held by persons in that vessel class will never change.

The analysis suggests that the block proposal may increase the cost to small fishermen of buying and selling QS and may, if it tends to increase the number of operations left in the fishery, increase the aggregate costs of exploiting the fishery and reduce the aggregate profits from fishing. There is a possibility, however, that Full/Partial block alternatives which eliminate vessel class restrictions on QS use will allow for some profitable consolidations that could not occur under the status quo.

6.0 REFERENCES

Dalheim, M.E. 1988. Killer Whale (*Orcinus orca*) Depredation on Longline Catches of Sablefish (*Anoplopoma fimbria*) in Alaska Waters. U.S. Dept. Comm., NOAA/NMFS, NWAFC Processed Report 88-14.

Supplemental Analysis of the Individual Fishing Quota Management Alternative for Fixed Gear Sablefish and Halibut Fisheries. Gulf of Alaska and Bering Sea/Aleutian Islands. March 27, 1992.

Analyses of "The Sitka Block" Proposed Amendment and "The Full/Partial Block" Proposed Amendment to the Individual Fishing Quota Management Alternative for Fixed Gear Sablefish and Halibut Fisheries. Gulf of Alaska and Bering Sea/Aleutian Islands" Discussion Draft. October 20, 1992.

Federal Register. 58(215):59375-59413. November 9, 1993.



7.0 AGENCIES AND INDIVIDUALS CONSULTED

Earl Krygier, Dave Benton, Dave Ackley
Alaska Department of Fish and Game
P.O. Box 25526
Juneau, AK 99802-5526

Joe Terry, Dave Colpo
Alaska Fisheries Science Center
National Marine Fisheries Service
7600 Sand Point Way N.E., Building 4
Seattle, WA 98115-0070

Jay Ginter, Sue Salveson; Fisheries Management Division
Tamra L. Faris, Steven Zimmerman; Protected Resources Management Division
National Marine Fisheries Service
P.O. Box 21668
Juneau, AK 99802-1668

Marilyn Dalheim
Marine Mammal Laboratory
National Marine Fisheries Service
7600 Sand Point Way N.E., Building 4
Seattle, WA 98115

Marcus Hartley, Chris Oliver
North Pacific Fishery Management Council
P.O. Box 103136
Anchorage, AK 99510

David Flannagan
Office of Enforcement
National Marine Fisheries Service
P.O. Box 21668
Juneau, AK 99802-1168

Linda Behnken, Dan Falvey
Alaska Longline Fishermen's Association
P.O. Box 1229
Sitka, AK 99835

Ron Hegge
14235 Hancock Drive
Anchorage, AK 99515-3961



8.0 LIST OF PREPARERS

Ben Muse, Kurt Iverson, and Kurt Schelle
Alaska Commercial Fisheries Entry Commission
8800-109 Glacier Highway
Juneau, AK 99801

Sally Bibb
National Marine Fisheries Service
P.O. Box 21668
Juneau, AK 99802-1668

Portions of this document are borrowed from previous analysis documents which relied heavily on contributions from other authors.

Data bases used in this analysis were supplied by:

National Marine Fisheries Service
Alaska Fisheries Science Center
7600 Sand Point Way N.E., Building 4
Seattle, WA 98115



9.0 APPENDIX I: ORIGINAL FULL/PARTIAL BLOCK PROPOSAL

**RONALD E. HEGGE
14235 HANCOCK DR.
ANCHORAGE, ALASKA 99515-3961**

**Phone (907) 345-8212
Fax (907) 345-8213**

**Richard B. Lauber, Chairman
N.P.F.M.C.
P.O. Box 103136
Anchorage, Alaska 99510**

May 19, 1992

Dear Rick:

I am writing to advise you of an amendment to the sablefish and halibut IFQ plan which I intend to introduce as an out of cycle proposal at the June meeting.

Proposed Amendment:

Allocation: Initial Quota Shares (QS) and Individual Fishing Quotas (IFQ) will be issued in blocks, which in the year of implementation will equal the number of QS necessary to produce 10,000 IFQ lbs.

All persons will receive that amount of QS and IFQ as per the original plan, however they will be parcelled into blocks, either full or partial. For example a person who would have received 15,000 lbs of IFQs will receive one full block of 10,000 IFQ lbs. and one partial block of 5,000 IFQ lbs.

Full Blocks will be the number of QS which generates 10,000 IFQ lbs. in the first year of implementation for each area. The number of QS constituting a full block will vary in each area because of the nature of the allocation. The table below shows the number of QS in full blocks for each area in the halibut and sablefish plans.

Halibut Full Blocks by Area (based on 1992 TACs)		
Area	Quota Shares in Full Block	IFQ lbs in Full Block
2A	57,471	10,000
3A	65,789	10,000
3B	57,142	10,000
4A	57,142	10,000
4B	35,971	10,000
4C	46,729	10,000
4D	53,191	10,000

Sablefish Full Blocks by Area (based on 1992 TACs)		
Area	Quota Shares in Full Block	IFQ lbs in Full Block
EY/SEO	57,571	10,000
WY	61,350	10,000
CG	59,880	10,000
WG	70,922	10,000
BS	66,225	10,000
AL	111,360	10,000

Partial Blocks will result when 1) A person's initial IFQs for a given area are less than 10,000 lbs, or 2) A person's initial IFQs are not exactly divisible by 10,000, i.e. the remaining portion of a persons IFQs not issued in full blocks.

R.B. Lauber
May 19, 1992

It should be noted that QS represent the total pounds landed by each person in a given area during their best five years. A persons IFQs are calculated by dividing his QS into the total amount of QS in any area (QS Pool) and multiplying by the TAC for that area, i.e. $IFQ = (QS/QS \text{ Pool}) * TAC$.

Ownership Limitations: Any person, as identified in the original amendment, may hold or purchase any number of full blocks, up to the ownership caps as identified in the original amendment. Any person who owns at least one full block in an area may own or otherwise control only one partial block in that area. Any person who does not own or otherwise control a full block in a given area may hold or control up to three partial blocks in that area.

Annual IFQ Allotments: After initial allocation annual IFQ lbs. will be assigned as in the original amendment, based on the amount of QS holdings by each person, but would continue to be identified as full or partial blocks. It should be noted that if the TACs change after the initial year of implementation the number of IFQ pounds each full block represents will change, however the number of QS constituting a full block will not change after implementation.

Vessel Classes: Vessel size classes will be removed from the plan, with the exception of the freezer category.

Rationale:

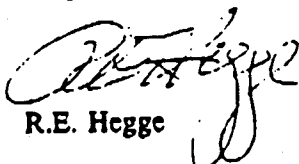
Clearly there is significant opposition to the IFQ plan adopted by the Council. The greatest opposition comes from small vessel operators, crewmen, and communities, all of whom feel the IFQ's would be bought up by large operators, which would eliminate future opportunity for those entering the fisheries and a loss of employment opportunities.

The Sitka Block (SB) proposal addresses some of these problems but also creates additional management difficulties. The SB proposal has certainly created opposition among the medium and large operators.

I feel the proposal I have outlined presents a compromise that gives all of the protection of a block program for new entrants and small vessels while not unduly restricting the larger participants. Removal of the vessel size classes eliminates an expensive and now unnecessary restriction.

Certainly amending a plan so recently passed by the Council and not yet approved by the Secretary causes some concern. The majority of the Council, myself included, did not feel traditional management tools could address the management problems with which we were faced. A decision of this magnitude must have industry support and I feel addressing the very valid concerns of such a large segment of the industry and dependent communities is critical to the successful implementation of the sablefish and halibut IFQ plan.

Respectfully,


R.E. Hegge

10.0 APPENDIX II: 10,000 POUND FULL BLOCKS

The Sitka Block and Full/Partial Block Discussion Draft presented to the Council in September 1992 contained analyses of Full/Partial Block proposals with 10,000 and 30,000 pound full blocks. At its January 1993 meeting the Council requested that the focus of the analysis be narrowed to Full/Partial Block proposals with 20,000 pound full blocks. This EA/RIR/IRFA thus analyzes 20,000 pound full blocks.

In this appendix, two additional alternatives have been prepared for both halibut and sablefish to show the impact of 10,000 pound blocks. Alternative 8 has 10,000 pound full blocks, no catcher vessel size classes, and allows two partial block accumulation. Alternative 9 also has 10,000 pound full blocks and no catcher vessel size classes, but it allows three partial block accumulation. Both Alternative 8 and Alternative 9 have been prepared for halibut and for sablefish. The results for these alternatives may be found in Tables A2-1 to A2-10 in this Appendix.³⁰

The tables in this appendix can be compared with the corresponding tables in the body of this report to see the impact of a decrease in full block size from 20,000 to 10,000 pounds. This discussion will focus on the changes in the numbers of full and partial blocks, and on changes in the numbers of persons left holding full and partial block packages if the maximum possible consolidation takes place.

A decrease in the size of full blocks from 20,000 to 10,000 pounds of IFQ in the first year of the program increases the number of full blocks issued and leaves the number of partial blocks unchanged. Following the full block size decrease, QS allocations between 10,000 and 20,000 pounds that once produced only partial blocks now produce full blocks. In general more full blocks can be made from any QS allocation over 10,000 pounds. For example, a 25,000 pound allocation produces one full block if full blocks are 20,000 pounds, but it produces two full blocks if full blocks are 10,000 pounds. On the other hand, the decrease in the full block sizes does not change the number of partial blocks. This is because each eligible applicant gets a partial block with both 20,000 and 10,000 full blocks and there are the same numbers of partial blocks in each case.

The results are different when attention shifts from the full and partial blocks themselves, to the minimum numbers of persons left holding full and partial block packages if the maximum possible consolidation takes place. While the number of full block holders tends to increase, the number of holders of partial block packages usually decrease.

The number of persons left holding full blocks tends to increase as the size of the full blocks falls from 20,000 to 10,000 pounds. This is because there are more full blocks. Offsetting the increase in the number of full blocks, however, is an increase in the number of full blocks needed in each full block package to bring it to the aggregation limit. For example, in IPHC area 2C the halibut aggregation limit is 74,000 pounds. While it only takes three 20,000 pound blocks to come close to this limit, it takes seven 10,000 pound blocks. In some areas and vessel classes the distribution of QS, the blocks sizes, and the aggregation limit interact in a way that leaves the number of persons with full block packages unchanged.

³⁰The results in this appendix are not comparable to those in the September 1992 Discussion Draft for several reasons. Among these are (1) introduction of sweeping up rules, (2) changes in the area aggregation rules, and (3) methodological changes in the analysis.

The number of persons left holding partial block packages usually decreases as the size of full blocks falls from 20,000 to 10,000 pounds. The reason for this is that there are more full block packages and these generally combine with more partial blocks which are then unavailable for partial block packages.

However, it is possible for the number of persons holding partial block packages to increase as the size of full blocks falls. For example, in the case with one catcher vessel size class and two partial block accumulation, the number of catcher vessel partial blocks in IPHC Area 4B rises from 53 to 68 when the size of the full blocks falls from 20,000 to 10,000 pounds. The reason for this is that the aggregation limit in this area, 30,387 pounds, severely limits the number of partial blocks available for consolidation with full blocks when the full block size is 10,000 pounds. There are not enough partial blocks of appropriate size to give one to each full block holder. As a result the number of partial blocks remaining for partial block packages increases and the number of partial block packages increases.

The possible minimum number of full block holders plus partial block holders can increase or decrease. The minimum numbers of block holders in each area are summarized in Table A2-1 for the 10,000 pound halibut alternatives and in Table A2-2 for the 10,000 pound sablefish alternatives. These tables may be compared Tables 4.1-2 (page 12) and 4.2-2 (page 15) in the executive summary, which provide corresponding information for the 20,000 pound alternatives.

Table A2-1. Total Halibut Block Holders by Area
10,000 pound Full Blocks; no Catcher Vessel Size Class

Area	2 Partial	3 Partial
2C	840	571
3A	1,174	812
3B	389	268
4A	183	146
4B	106	84
4C	44	35
4D	45	36
4E	25	17

Table A2-2. Total Sablefish Block Holders by Area
10,000 pound Full Blocks; no Catcher Vessel Size Class

Area	2 Partial	3 Partial
Aleutians	59	43
Bering Sea	57	40
Central Gulf	212	153
Southeast Outside	267	205
Western Gulf	75	54
West Yakutat	145	102

Table A2-3. Alternative 8: Halibut Partial Block Analysis
Numbers and size of Partial Block packages by area and vessel type.

Alternative 8:
Halibut. 10,000 lb. Full Block Size.
2 Partial Block accumulation limit.
Catcher and Freezer vessels.

Mgmt Area	Vessel Category	Initial Number of Partial Blocks	Minimum Number of Partial Block Packages	Average Size of Partial Block Packages	Percent Area TAC in Partial Block Packages
2C	Catcher/Freezer	2,371	808	6,261	68.4
3A	Catcher/Freezer	3,223 7	1,082 3	7,103 4,224	28.9 0.0
3B	Catcher/Freezer	879 7	361 3	7,397 9,763	30.3 0.3
4A	Catcher/Freezer	347	112	4,572	30.1
4B	Catcher/Freezer	152 3	68 1	8,619 13,161	34.5 0.8
4C	Catcher/Freezer	82	29	8,992	43.5
4D	Catcher/Freezer	61 5	25 3	9,153 9,558	38.1 4.8
4E	Catcher	155	25	4,000	100.0

Mgmt Area	identifies the IPHC halibut management area.
Vessel Category	identifies the vessel class.
Initial Number of Partial Blocks	shows the number of partial blocks originally issued for the area and vessel class. This number is the number prior to the "sweeping up" of partial blocks under 1,000 pounds.
Minimum Number of Partial Block Packages	shows the minimum possible number of partial block packages after "sweeping up" and other possible consolidation.
Average Size of Partial Block Packages	shows the average size of the partial block packages in column 4 measured in pounds of IFQ in 1991.
Pct. Area TAC in Partial Block Packages	shows the percentage of the TAC in the IPHC management area in partial block packages held by operators in the relevant vessel class. This percentage does not necessarily include all the quota in partial blocks because some full block holders may hold partial blocks.

Table A2-4. Alternative 8: Halibut Full Block Analysis
Numbers and size of Full Block packages by area and vessel type.

Alternative 8.
Halibut. 10,000 lb. Full Block Size.
Catcher and Freezer Vessels.

Mgmt Area	Vessel Category	Initial Number of Full Blocks	Maximum Full Block Package Size	Minimum Number of Full Block Packages	Average Size of Full Block Packages	Percent Area TAC in Full Block Packages
2C	Catcher/Freezer	221	74,000	32	73,153	31.6
3A	Catcher/Freezer	1,839 11	214,702 214,702	88 1	213,486 114,851	70.6 0.4
3B	Catcher/Freezer	576 14	248,292 248,292	24 1	247,949 149,791	67.6 1.7
4A	Catcher/Freezer	71	19,154	71	16,731	69.9
4B	Catcher/Freezer	105 4	30,387 30,387	35 2	30,060 24,335	61.9 2.9
4C	Catcher/Freezer	30	23,673	15	22,617	56.5
4D	Catcher/Freezer	29 4	20,808 20,808	15 2	20,167 20,000	50.4 6.7
4E	Catcher	0	89,279	0	0	0.0

Mgmt Area

identifies the IPHC halibut management area.

Vessel Category

identifies the vessel class.

Initial Number of Full Blocks

shows the number of full blocks originally issued for the area and vessel class.

Maximum Full Block Package Size

shows the maximum amount of the TAC that any person in the area could hold given the aggregation limits in the original plan.

Minimum Number of Full Block Packages

shows the minimum possible number of persons holding full blocks after consolidation had gone to its maximum extent.

Average Size of Full Block Packages

shows the average size of the full block packages in column 5 measured in pounds of IFQ in 1991. The average size of a full block package includes some partial block quota shares.

Pct. Area TAC in Full Block Packages

shows the percentage of the TAC in the IPHC management area in full block packages held by operators in the relevant vessel class. Some of this represents partial block QS held by full block holders.

Table A2-5. Alternative 9: Halibut Partial Block Analysis
Numbers and size of Partial Block packages by area and vessel type.

Alternative 9:
Halibut. 10,000 lb. Full Block Size.
3 Partial Block accumulation limit.
Catcher and Freezer vessels.

Mgmt Area	Vessel Category	Initial Number of Partial Blocks	Minimum Number of Partial Block Packages	Average Size of Partial Block Packages	Percent Area TAC in Partial Block Packages
2C	Catcher/Freezer	2,371	539	9,386	68.4
3A	Catcher/Freezer	3,223 7	721 2	10,660 6,336	28.9 0.0
3B	Catcher/Freezer	879 7	241 2	11,079 14,644	30.3 0.3
4A	Catcher/Freezer	347	75	6,828	30.1
4B	Catcher/Freezer	152 3	46 1	12,741 13,161	34.5 0.8
4C	Catcher/Freezer	82	20	13,038	43.5
4D	Catcher/Freezer	61 5	17 2	13,460 14,337	38.1 4.8
4E	Catcher	155	17	5,882	100.0

Mgmt Area	identifies the IPHC halibut management area.
Vessel Category	identifies the vessel class.
Initial Number of Partial Blocks	shows the number of partial blocks originally issued for the area and vessel class. This number is the number prior to the "sweeping up" of partial blocks under 1,000 pounds.
Minimum Number of Partial Block Packages	shows the minimum possible number of partial block packages after "sweeping up" and other possible consolidation.
Average Size of Partial Block Packages	shows the average size of the partial block packages in column 4 measured in pounds of IFQ in 1991.
Pct. Area TAC in Partial Block Packages	shows the percentage of the TAC in the IPHC management area in partial block packages held by operators in the relevant vessel class. This percentage does not necessarily include all the quota in partial blocks because some full block holders may hold partial blocks.

Table A2-6. Alternative 9: Halibut Full Block Analysis
Numbers and size of Full Block packages by area and vessel type.

Alternative 9.
Halibut. 10,000 lb. Full Block Size.
Catcher and Freezer Vessels.

Mgmt Area	Vessel Category	Initial Number of Full Blocks	Maximum Full Block Package Size	Minimum Number of Full Block Packages	Average Size of Full Block Packages	Percent Area TAC in Full Block Packages
2C	Catcher/Freezer	221	74,000	32	73,153	31.6
3A	Catcher/Freezer	1,839 11	214,702 214,702	88 1	213,486 114,851	70.6 0.4
3B	Catcher/Freezer	576 14	248,292 248,292	24 1	247,949 149,791	67.6 1.7
4A	Catcher/Freezer	71	19,154	71	16,731	69.9
4B	Catcher/Freezer	105 4	30,387 30,387	35 2	30,060 24,335	61.9 2.9
4C	Catcher/Freezer	30	23,673	15	22,617	56.5
4D	Catcher/Freezer	29 4	20,808 20,808	15 2	20,167 20,000	50.4 6.7
4E	Catcher	0	89,279	0	0	0.0

Mgmt Area

identifies the IPHC halibut management area.

Vessel Category

identifies the vessel class.

Initial Number of Full Blocks

shows the number of full blocks originally issued for the area and vessel class.

Maximum Full Block Package Size

shows the maximum amount of the TAC that any person in the area could hold given the aggregation limits in the original plan.

Minimum Number of Full Block Packages

shows the minimum possible number of persons holding full blocks after consolidation had gone to its maximum extent.

Average Size of Full Block Packages

shows the average size of the full block packages in column 5 measured in pounds of IFQ in 1991. The average size of a full block package includes some partial block quota shares.

Pct. Area TAC in Full Block Packages

shows the percentage of the TAC in the IPHC management area in full block packages held by operators in the relevant vessel class. Some of this represents partial block QS held by full block holders.

Table A2-7. Alternative 8: Sablefish Partial Block Analysis
Numbers and size of Partial Block packages by area and vessel type.

Alternative 8.
Sablefish. 10,000 lb. Full Block Size.
2 Partial Block accumulation limit.
One Catcher Vessel Class and Freezer Vessels.

Mgmt Area	Vessel Category	Initial Number of Partial Blocks	Minimum Number of Partial Block Packages	Average Size of Partial Block Packages	Percent Area TAC in Partial Block Packages
Aleutians	Catcher	108	39	10,200	7.5
	Freezer	29	10	11,221	2.1
Bering Sea	Catcher	122	40	10,223	12.0
	Freezer	31	12	9,285	3.3
Central Gulf	Catcher	598	170	10,629	9.7
	Freezer	26	9	10,481	0.5
Southeast Outside	Catcher	628	183	11,462	20.2
	Freezer	7	3	7,450	0.2
Western Gulf	Catcher	156	55	11,284	12.0
	Freezer	29	10	10,094	2.0
West Yakutat	Catcher	393	126	10,394	15.4
	Freezer	11	4	8,141	0.4

Mgmt Area	identifies the sablefish management area or regulatory district.
Vessel Category	identifies the vessel class.
Initial Number of Partial Blocks	shows the number of partial blocks originally issued for the area and vessel class. This number is the number prior to the "sweeping up" of partial blocks under 3,000 pounds.
Minimum Number of Partial Block Packages	shows the minimum possible number of partial block packages after "sweeping up" and other possible consolidation.
Average Size of Partial Block Packages	shows the average size of the partial block packages in column 4 measured in pounds of IFQ in 1991.
Pct. Area TAC in Partial Block Packages	shows the percentage of the TAC in the management area in partial block packages held by operators in the relevant vessel class. This percentage does not necessarily include all the quota in partial blocks because some full block holders may hold partial blocks.

Table A2-8. Alternative 8: Sablefish Full Block Analysis
Numbers and size of Full Block packages by area and vessel type.

Alternative 8.
Sablefish. 10,000 lb. Full Block Size.
One Catcher Vessel Class and Freezer Vessels.

Mgmt Area	Vessel Category	Initial Number of Full Blocks	Maximum Full Block Package Size	Minimum Number of Full Block Packages	Average Size of Full Block Packages	Percent Area TAC in Full Block Packages
Aleutians	Catcher	206	534,753	4	520,769	39.4
	Freezer	267	534,753	6	449,665	51.0
Bering Sea	Catcher	167	655,890	3	563,893	49.5
	Freezer	119	655,890	2	602,575	35.3
Central Gulf	Catcher	1,459	522,853	29	505,918	78.7
	Freezer	206	522,853	4	519,466	11.1
Southeast Outside	Catcher	791	103,684	80	102,130	78.8
	Freezer	7	103,684	1	78,025	0.8
Western Gulf	Catcher	267	466,354	6	451,618	52.5
	Freezer	170	466,354	4	431,844	33.5
West Yakutat	Catcher	675	499,555	14	491,374	81.1
	Freezer	25	499,555	1	259,722	3.1

Mgmt Area	identifies the sablefish management area or regulatory district.
Vessel Category	identifies the vessel class.
Initial Number of Full Blocks	shows the number of full blocks originally issued for the area and vessel class.
Maximum Full Block Package Size	shows the maximum amount of the TAC that any person in the area could hold given the aggregation limits in the original plan.
Minimum Number of Full Block Packages	shows the minimum possible number of persons holding full blocks after consolidation had gone to its maximum extent.
Average Size of Full Block Packages	shows the average size of the full block packages in column 5 measured in pounds of IFQ in 1991. The average size of a full block package includes some partial block quota shares.
Pct. Area TAC in Full Block Packages	shows the percentage of the TAC in the management area in full block packages held by operators in the relevant vessel class. Some of this represents partial block QS held by full block holders.

Table A2-9. Alternative 9: Sablefish Partial Block Analysis
Numbers and size of Partial Block packages by area and vessel type.

Alternative 9.
Sablefish. 10,000 lb. Full Block Size.
3 Partial Block accumulation limit.
One Catcher Vessel Class and Freezer Vessels.

Mgmt Area	Vessel Category	Initial Number of Partial Blocks	Minimum Number of Partial Block Packages	Average Size of Partial Block Packages	Percent Area TAC in Partial Block Packages
Aleutians	Catcher	108	26	15,299	7.5
	Freezer	29	7	16,030	2.1
Bering Sea	Catcher	122	27	15,145	12.0
	Freezer	31	8	13,927	3.3
Central Gulf	Catcher	598	114	15,851	9.7
	Freezer	26	6	15,722	0.5
Southeast Outside	Catcher	628	122	17,194	20.2
	Freezer	7	2	11,175	0.2
Western Gulf	Catcher	156	37	16,774	12.0
	Freezer	29	7	14,420	2.0
West Yakutat	Catcher	393	84	15,591	15.4
	Freezer	11	3	10,855	0.4

Mgmt Area	identifies the sablefish management area or regulatory district.
Vessel Category	identifies the vessel class.
Initial Number of Partial Blocks	shows the number of partial blocks originally issued for the area and vessel class. This number is the number prior to the "sweeping up" of partial blocks under 3,000 pounds.
Minimum Number of Partial Block Packages	shows the minimum possible number of partial block packages after "sweeping up" and other possible consolidation.
Average Size of Partial Block Packages	shows the average size of the partial block packages in column 4 measured in pounds of IFQ in 1991.
Pct. Area TAC in Partial Block Packages	shows the percentage of the TAC in the management area in partial block packages held by operators in the relevant vessel class. This percentage does not necessarily include all the quota in partial blocks because some full block holders may hold partial blocks.

Table A2-10. Alternative 9: Sablefish Full Block Analysis
Numbers and size of Full Block packages by area and vessel type.

Alternative 9.
Sablefish. 10,000 lb. Full Block Size.
One Catcher Vessel Class and Freezer Vessels.

Mgmt Area	Vessel Category	Initial Number of Full Blocks	Maximum Full Block Package Size	Minimum Number of Full Block Packages	Average Size of Full Block Packages	Percent Area TAC in Full Block Packages
Aleutians	Catcher	206	534,753	4	520,769	39.4
	Freezer	267	534,753	6	449,665	51.0
Bering Sea	Catcher	167	655,890	3	563,893	49.5
	Freezer	119	655,890	2	602,575	35.3
Central Gulf	Catcher	1,459	522,853	29	505,918	78.7
	Freezer	206	522,853	4	519,466	11.1
Southeast Outside	Catcher	791	103,684	80	102,130	78.8
	Freezer	7	103,684	1	78,025	0.8
Western Gulf	Catcher	267	466,354	6	451,618	52.5
	Freezer	170	466,354	4	431,844	33.5
West Yakutat	Catcher	675	499,555	14	491,374	81.1
	Freezer	25	499,555	1	259,722	3.1

Mgmt Area	identifies the sablefish management area or regulatory area.
Vessel Category	identifies the vessel class.
Initial Number of Partial Blocks	shows the number of partial blocks originally issued for the area and vessel class. This number is the number prior to the "sweeping up" of partial blocks under 3,000 pounds.
Minimum Number of Partial Block Packages	shows the minimum possible number of partial block packages after "sweeping up" and other possible consolidation.
Average Size of Partial Block Packages	shows the average size of the partial block packages in column 4 measured in pounds of IFQ in 1991.
Pct. Area TAC in Partial Block Packages	shows the percentage of the TAC in the management area in partial block packages held by operators in the relevant vessel class. This percentage does not necessarily include all the quota in partial blocks because some full block holders may hold partial blocks.



PART III

DRAFT FOR SECRETARIAL REVIEW

ENVIRONMENTAL ASSESSMENT

AND

**REGULATORY IMPACT REVIEW/
INITIAL REGULATORY FLEXIBILITY ANALYSIS**

FOR THE

**"MODIFIED BLOCK" PROPOSED AMENDMENT
TO THE INDIVIDUAL FISHING QUOTA ALTERNATIVES
FOR ALASKA'S FIXED GEAR HALIBUT AND SABLEFISH FISHERIES**

GULF OF ALASKA

AND

BERING SEA/ALEUTIAN ISLANDS

Prepared by
Alaska Commercial Fisheries Entry Commission
and
National Marine Fisheries Service

May 25, 1994



TABLE OF CONTENTS

1.0	INTRODUCTION	211
1.1	Management Background	212
1.2	Purpose and Need For the Action	215
1.3	Alternatives Considered	217
1.3.1	Alternative 1: Status Quo: The Current Halibut and Sablefish IFQ Plans	217
1.3.2	Alternative 2: Modified Block Proposal for Halibut	218
1.3.3	Alternative 3: Modified Block Proposal for Sablefish	219
1.4	Initial Distribution of QS/IFQ	219
2.0	NEPA REQUIREMENTS: ENVIRONMENTAL IMPACTS OF THE ALTERNATIVES	231
2.1	Environmental Impacts of the Alternatives	231
2.2	Impacts on Threatened or Endangered Species	232
2.3	Impacts on Marine Mammals	234
2.4	Conclusions or Findings of No Significant Impact	235
3.0	REGULATORY IMPACT REVIEW: SOCIAL AND ECONOMIC IMPACTS OF THE ALTERNATIVES	237
3.1	Alternative 1: The Status Quo: The Current IFQ Plans	238
3.2	Alternative 2: The Modified Block Proposal for the Halibut Fishery	239
3.3	Alternative 3: The Modified Block Proposal for the Sablefish Fishery	249
3.4	Reporting Costs	254
3.5	Administrative, Enforcement and Information Costs	254
3.6	Economic Efficiency Implications of the Modified Block Proposed Amendment	255
3.6.1	Increased Search and Transactions Costs	256
3.6.2	Net Economic Benefits Resulting From Consolidation	257
3.7	Discussion of Other Aspects of the Proposed Amendment	258
3.8	Summary of Economic Impacts: Distribution of Costs and Benefits	259
4.0	INITIAL REGULATORY FLEXIBILITY ANALYSIS	261
4.1	Economic Impact on Small Entities	261
5.0	SUMMARY AND CONCLUSIONS	263
6.0	REFERENCES	265
7.0	AGENCIES AND INDIVIDUALS CONSULTED	267
8.0	LIST OF PREPARERS	269
	APPENDIX	271



LIST OF TABLES

TABLE 1.4-1. Distribution of halibut IFQs assuming 1991 TACs. The table shows the number of persons: 1) as they currently stand, and 2) after the blocks under 1,000 lbs. IFQ are consolidated within vessel classes.	222
TABLE 1.4-2. Distribution of halibut IFQs assuming 1991 TACs. The table shows the sum of IFQs: 1) as they currently stand, and 2) after the blocks under 1,000 lbs. IFQ are consolidated within vessel classes.	224
TABLE 1.4-3. Distribution of sablefish IFQs assuming 1991 TACs. The table shows the number of persons: 1) as they currently stand, and 2) after the blocks under 3,000 lbs. IFQ are consolidated within each vessel class. ...	226
TABLE 1.4-4. Distribution of sablefish IFQs assuming 1991 TACs. The table shows the sum of IFQs: 1) as they currently stand, and 2) after the blocks under 3,000 lbs. IFQ are consolidated in each vessel class.	228
TABLE 3.2-1. Modified Block Proposal: HALIBUT. Estimated maximum consolidation of blocks by vessel category. The estimates of initial quota share holders include the consolidation provisions for blocks under 1,000 lbs. IFQ.	245
TABLE 3.2-2. Modified Block Proposal: HALIBUT. Blocked and unblocked IFQ within vessel categories using 1991 TACs. Note that in some estimates of maximum consolidation, one IFQ block will combine with unblocked IFQ.	247
TABLE 3.3-1. Modified Block Proposal: SABLEFISH. Estimated maximum consolidation of blocks by area and vessel category. The estimates of initial quota share holders include the consolidation provisions for blocks under 3,000 lbs. IFQ.	252
TABLE 3.3-2. Modified Block Proposal: SABLEFISH. Blocked and unblocked IFQ within vessel categories using 1991 TACs. Note that in some estimates of maximum consolidation, one IFQ block will combine with unblocked IFQ.	253



1.0 INTRODUCTION

During the September 1993 North Pacific Fishery Management Council (Council) meeting in Anchorage, the Council discussed the EA/RIR/IRFAs for the "Sitka Block Proposal" and the "Full/Partial Block Proposal." These analyses can be found in Part I and Part II of this document.

The Council decided that they wanted to add a "block" amendment to the individual fishing quota program (IFQ) for the fleet of small part-time operators but preferred the greater flexibility of the current plan (status quo alternative) for larger more full-time operations. At the meeting, the Council developed and approved the "Modified Block" proposed amendment.

The Modified Block proposed amendment will affect the IFQ programs for both the halibut and sablefish fisheries. The Modified Block amendment is a mixture of the "partial block" alternatives and the current IFQ plan (the status quo).

The groundfish fisheries in the Exclusive Economic Zone (EEZ) (3 to 200 miles offshore) of the Gulf of Alaska (GOA) and Bering Sea/Aleutian Islands Area (BSAI) are managed under the Fishery Management Plan (FMP) for the Groundfish Fisheries of the GOA and the FMP for the Groundfish Fisheries of the BSAI.

Both FMPs were developed by the Council under the Magnuson Fishery Conservation and Management Act (Magnuson Act). The GOA FMP was approved by the Secretary of Commerce and become effective in 1978 and the BSAI FMP become effective in 1982.

The domestic fishery for halibut in and off of Alaska is managed by the International Pacific Halibut Commission (IPHC) as provided by the Convention between the United States and Canada for the Preservation of the Halibut Fishery of the Northern Pacific Ocean and the Bering Sea (Convention), signed at Washington on March 29, 1979, and the Northern Pacific Halibut Act of 1982.

While the IPHC has the primary authority for managing the halibut resource for biological conservation purposes, the Halibut Act authorizes the appropriate Regional Fishery Management Councils established by the Magnuson Act to develop regulations that are in addition to, but not in conflict with, regulations adopted by the IPHC affecting the U.S. halibut fishery.

Under this authority, the Council may develop, for approval by the Secretary of Commerce (Secretary), limited access regulations for the Pacific halibut fishery in Convention waters in and off of the State of Alaska that are consistent with criteria set forth in Section 303(b) (6) of the Magnuson Act. The Council does not, however, have an FMP for halibut.

Actions taken to amend Fishery Management Plans or implement other regulations governing the groundfish fisheries and actions taken by the Secretary to implement regulations governing the halibut fishery must meet the requirements of Federal laws and regulations. Among the most important of these are the National Environmental Policy Act (NEPA), the Endangered Species Act (ESA), the Marine Mammal Protection Act (MMPA), Executive Order (E.O.) 12866, and the Regulatory Flexibility Act (RFA).

NEPA, E.O. 12866, and the RFA require a description of the purpose and need for the proposed action as well as a description of alternative actions which may address the problem. This information is included in Chapter 1 of this document.

Chapter 2 contains information on the biological and environmental impacts of the alternatives as required by NEPA. Impacts on endangered species and marine mammals are also addressed in this section.

Chapter 3 contains a Regulatory Impact Review (RIR) which addresses the requirements of both E.O. 12866 and the RFA that economic impacts of the alternatives be considered.

Chapter 4 contains the Initial Regulatory Flexibility Analysis (IRFA) required by the RFA which specifically addresses the impacts of the proposed action on small businesses.

1.1 Management Background

The following is a summary of the Council's previous actions with respect to Alaska's halibut and sablefish fisheries. This summary is largely taken from earlier reports which describe the Council's actions in greater detail. A listing of previous reports can be found in Chapter 6.0.

The commercial harvest of halibut off Alaska began in the 1890s. Management of halibut was originally controlled by both the United States and Canada off of their respective coasts. In 1923 the International Pacific Halibut Commission (IPHC) was established by a convention between the United States and Canada to manage the halibut fishery. An additional treaty was signed in 1953 and was amended by protocol in 1979. The IPHC has authority to establish regulatory areas, limit catch by area, license vessels, regulate gear types, protect nursery areas, collect statistics and conduct scientific research.

In 1982, the U.S. government added to the management tools available for halibut by delegating additional regulatory authority to the geographically responsible Fishery Management Councils (Northern Pacific Halibut Act of 1982, P.L. 97-176). Among other authorities, this act allows the Councils to develop limited entry criteria as set forth in Section 303(b)(6) of the Magnuson Fishery Conservation and Management Act (MFCMA) for approval by the Secretary of Commerce.

The Act also prohibited foreign fishing for halibut in the 200-mile Exclusive Economic Zone (EEZ). The North Pacific Management Council (Council), by virtue of its geographical jurisdiction under the MFCMA and the Halibut Act, regulates halibut off the coast of Alaska.

In December of 1991, the Council recommended an Individual Fishing Quota (IFQ) Program for management of the "fixed gear" sablefish and halibut fisheries off of Alaska. "Fixed Gear" was defined to include all hook and line fishing gears (longlines, jigs, handlines, and troll gear). The IFQ plan for halibut was approved as a regulatory amendment by the Secretary of Commerce in early 1993.

The Council's decision followed several years of discussions about how to best contain effort in these fisheries. The Council became concerned about a rapidly growing halibut fleet and shrinking seasons in 1978. In November 1978, the Council set a December 31, 1978 cut-off date for eligibility in the eventuality that an access control program would be developed for halibut in the near future. In 1979, Council workgroups discussed different methods to limit access to the fishery.

During this same time period, the Council studied limited entry options. The Council contracted with Northwest Resources Analysis of Seattle, Washington to prepare a study of limited access options in the halibut fishery (Northwest Resource Analysis 1983). The report concluded that an IFQ system

of management had the greatest potential for resolution of problems in the fishery and estimated that the potential net benefits from such a system would be at least \$5.373 million.

A moratorium on entry into the halibut fisheries was recommended by the Council in 1983, but was rejected by the Secretary of Commerce. This moratorium was recommended as an interim measure in response to shrinking seasons and other management problems associated with a derby-style fishery.

In the mid-1980s the Council began to consider effort management alternatives for the sablefish fishery. This fishery was developing into a derby-style fishery similar to the halibut fisheries. In 1985 the Council began exploring options to open access by soliciting input from the industry on potential management alternatives.

In 1987 the Council took another step toward limited entry by adopting a Statement of Commitment which dedicated the Council to "develop strategies for license limitation or the use of individual transferable quotas in the sablefish fixed gear fishery." The Council held public workshops in 1988 to explore management options to change the derby-style fishery.

In mid-1988 the Council directed its staff to develop and analyze five management options for the sablefish fixed gear fishery: (1) continued open access without modifications, (2) modified open access, (3) individual fishing quotas, (4) license limitation, and (5) a combined license, quota, and open access system. In December of 1988, after reviewing a draft analysis document, the Council declared that the status quo (open access) was unacceptable and expressed a desire to further explore the options of license limitation and IFQs.

In early 1989, the Council notified the public that it was considering similar limited entry management options for all fisheries, particularly for the halibut fishery off Alaska. In November of 1989 the Council reviewed a Supplemental Environmental Impact Statement (SEIS) which analyzed four options for future management of the sablefish fisheries off Alaska: (1) continued open access, (2) license limitation, (3) IFQs, and (4) a combination system called annual fishing allotments or AFAs.

Based upon the analysis contained in the SEIS, the Council decided that license limitation and annual fishing allotments were not viable alternatives to solve the problems facing the sablefish fixed gear fisheries. In April of 1990 the Council reviewed the Supplement to the SEIS which analyzed specific IFQ programs against the open access alternatives.

In December of 1990, the Council directed staff to prepare a revised Supplement which analyzed various forms of an IFQ management alternative for sablefish. The four IFQ systems analyzed depicted a range of alternatives in terms of qualification periods, transferability restrictions, ownership caps, community development quotas, and other system specifics. At that time, the Council directed staff to analyze a similar set of IFQ alternatives for the halibut fishery with the intent that the IFQ program would eventually include both sablefish and halibut.

The revised Supplement to the SEIS for sablefish fishery management was released for public review on May 14, 1991. An Environmental Impact Statement (EIS) on IFQ alternatives for the halibut fishery was released for public review on July 19, 1991. The Council wanted to ultimately submit a combined package and postponed decisions on both fisheries until the September 1991 meeting.

In September of 1991 the Council provisionally recommended an IFQ management alternative for both fisheries. The Council established an IFQ implementation team comprised of staff from various government agencies and representatives from affected industry groups. The team was to produce an implementation plan for Council and public review prior to the December 1991 meeting.

The Draft Implementation Plan was made available for public review and a public hearing was held prior to the December 1991 meeting. At the December 1991 meeting, the Council made some minor revisions in their IFQ plans for sablefish and halibut, and recommended a halibut and sablefish IFQ alternative.

When the Council passed the proposed IFQ program for the sablefish and halibut fisheries in December of 1991, the Council recognized that they might need to consider proposals to further adjust aspects of the program. The Council delayed sending their IFQ plan amendment (regulatory amendment for halibut) to the Secretary of Commerce so that further analysis of their plan could be completed.¹

At the April 1992 meeting, the Council rejected a motion to rescind its earlier vote and directed that the IFQ plan amendment package be forwarded to the Secretary of Commerce. The current IFQ programs for sablefish and halibut were approved by the Secretary of Commerce in early 1993.

At the April 1992 meeting, the Council also asked staff to analyze two proposed amendments to the IFQ plans which they had adopted. The first was called the "Sitka Block" proposal² and the second was called the "1,000 Pound Minimum IFQ" proposal. At the June 1992 meeting, the Council asked staff to analyze a third proposal which has been named the "Full/Partial Block" proposal.

All three proposals were developed to address concerns about the current IFQ plan for halibut and sablefish. The two block proposals were to apply to both the sablefish and halibut fisheries. The "1,000 pound minimum IFQ" proposal was to apply to the halibut fishery only. The State of Alaska agreed to analyze all three proposals and asked the Commercial Fisheries Entry Commission to conduct the analyses.

Discussion draft reports on the three proposals were presented to the Council and Advisory Panel (AP) at their September 1992 meeting. These reports were sent out for public comment in October of 1992 and again presented to the Council at their January 1993 meeting.³

At the January 1993 meeting, the Council adjusted the alternatives under each proposal and asked that an Environmental Assessment and Regulatory Impact Review / Initial Regulatory Flexibility Analyses (EA/RIR/IRFA) be prepared for each of the proposals. They asked for a single report on the two block proposals and a separate report on the "1,000 Pound Minimum IFQ" proposal.

¹See Supplemental Analysis Of The Individual Fishing Quota Management Alternative For Fixed Gear Sablefish and Halibut Fisheries - Gulf of Alaska and Bering Sea/Aleutian Islands (March 27, 1992). For brevity, this report will be referred to as the Supplemental Analysis herein.

²The Sitka Block proposal was first presented to the Alaska Longline Fisherman's Association by Howard Pendell.

³At the request of the Council, the reports on the two block proposals were combined into a single discussion draft report.

Draft reports on the proposals were presented at the June 1993 Council meeting. At that meeting, the Council dropped further consideration of the "1,000 Pound Minimum IFQ" proposal, but asked that the analysis of the draft EA/RIR/IRFA for the two block proposals be put out for public review.

At their September 1993 meeting, the council took public testimony on the Draft EA/RIR/IRFA on the two block proposals. At this meeting, the Council developed and passed the "Modified Block" amendment. The Modified Block proposed amendment represents a hybrid of the Full/Partial Block alternatives and the status quo alternative presented in the analysis.

Part III of this final EA/RIR/IRFA has been added since the September 1993 Council meeting. It presents an analysis of the Modified Block proposal.

1.2 Purpose and Need For the Action

Both the Sitka Block proposal and the Full/Partial Block proposal represent efforts to address concerns in some Alaska coastal communities that there may be a large consolidation of quota shares under the current IFQ plan and that such an extensive consolidation might be harmful to the traditional fishing economies of some Alaska coastal communities.⁴ Both of these proposals suggest modifications of the current plan in order to ensure that small part-time operations and diversified operations can continue to profitably participate in the IFQ fisheries.

The implicit assumption under both of the block proposals is that quota shares (QS) under the current IFQ program will tend to be more valuable to full-time operations.⁵ If this proves to be the case, full-time operations will be able to bid more for the QS. Proponents of the block proposals predict that small part-time operations, diversified operations which fish in these fisheries on a part-time basis, and small "entry-level" operations will tend to disappear from these fisheries over time.

If this occurs, proponents of the block proposals feel that it would have deleterious social and economic effects on many of Alaska's coastal communities. Supporters of the proposals approve of certain aspects of the current Council IFQ plans, but would like to take a more conservative approach to ensure that a diverse group of fishing operations can continue to profitably participate in these fisheries.

A description of the Sitka Block proposed amendment can be found in Part I of this report. Essentially, initial allocations of quota share would be placed into blocks and thereafter would have to be traded as a blocks.⁶ A new ownership constraint would also be added which would restrict the number of blocks that any person could hold.

⁴For example, see Socioeconomic Impacts Of The Proposed IFO System On Southeast Alaska Communities, April 1992. This report was prepared for the Sealaska Corporation by The McDowell Group.

⁵In this report, QS is the abbreviation for both quota share and quota shares.

⁶The one exception to this is the rule that allows for the "sweeping up" of extremely small amounts of QS into blocks of fishable amounts. This occurs under both the Sitka Block and the Full/Partial Block.

Under the Sitka Block proposal, available data suggest that a large number of relatively small blocks would be created. Proponents of the proposal felt that this fact, coupled with the constraint on the number of blocks that could be held in an area, would make the small blocks unattractive to most full-time operations. As a result, they felt the proposal would guarantee that a large number of permanent small blocks would always be available so that new entrants, small part-time operations, and diversified operations could continue to fish in these fisheries profitably.

The Full/Partial Block proposal was developed as an alternative to the Sitka Block proposal. The author of the Full/Partial Block proposal felt that the Sitka Block proposal went too far and would inhibit the development of profitable full-time operations. A full description of the proposal can be found in Part II of this report.

The Full/Partial Block proposal attempts to address concerns that there needs to be more protection for small part-time operations than those which exist under the current IFQ plan. However, the Full/Partial Block proposal also attempts to make it easier for full-time operations to buy and sell QS in the desired quantities than does the Sitka Block.

Under the Full/Partial Block alternatives discussed in Part II, full blocks (in an area) would be QS worth 20,000 pounds of IFQ in the implementation year and partial blocks would be QS worth less than 20,000 pounds. A person whose initial allocation of QS was worth more than 20,000 pounds of IFQ could be issued one or more full blocks and a partial block to cover the remainder of the person's QS allocation. A person whose initial allocation of QS was less than 20,000 pounds of IFQ in the implementation year would be issued a single partial block.

Under the Full/Partial Block proposal, persons who held at least one full block in an area could hold only one partial block in the area. Persons could hold any amount of full blocks for an area as long as the total QS embodied in their full and partial blocks for the area did not exceed the ownership constraints in the current plan. Persons who held just partial blocks also were restricted in the number that they could hold in an area. This latter feature was meant to achieve the same objectives as the Sitka Block.⁷

At their September 1993 meeting, the Council took public testimony and discussed the block alternatives. The Alaska Longline Fisherman's Association (ALFA) who had originally proposed the Sitka Block amendment, shifted their support to one of the Full/Partial Block alternatives. ALFA had decided that the Sitka Block proposal was too restrictive particularly for full-time operations which needed to change their holdings of QS.

During the Council's discussion, the idea arose that putting only the relatively small initial allocations into blocks and adding constraints on the number of such blocks that a person could hold in an area would provide the additional protection for the part-time fleet which both block proposals were trying to achieve. Some Council members felt that the "Full Block feature" would be less efficient than the current program and was not needed to accomplish the major objective of the block proposals.

The Council then developed and passed the Modified Block proposed amendment. Under the proposed amendment, initial allocations of QS worth 20,000 pounds or more of IFQ in the first year of the program would be "unblocked" and transferable under the same conditions as QS under the

⁷Some of the alternatives in Part II allowed such persons to hold three partial blocks per area while other alternatives allowed two partial blocks per area.

current IFQ program. Initial allocations of QS worth less than 20,000 pounds of IFQ in the first year of the program would be blocked and could only be traded as a block.

Under the Modified Block proposed amendment, if a person holds any unblocked QS in an area that person can only hold a single block of QS for the area. Persons who hold no unblocked QS in an area can hold up to two blocks in that area. A more detailed description of the Modified Block proposal can be found in Section 1.3 below.

1.3 Alternatives Considered

The Council considered a number of Sitka Block alternatives for halibut and sablefish in Part I of this document and a number of Full/Partial Block alternatives in Part II of this document. All alternatives were compared to the current plan (status quo).

Part III of this document analyzes the Modified Block amendment passed at the September 1993 Council meeting. Again, an IFQ program under the modified block amendment is compared directly with the status quo.

1.3.1 Alternative 1: Status Quo: The Current Halibut and Sablefish IFQ Plans

Under the current IFQ plans, a person's IFQ in an area for a given year largely will depend upon the person's quota shares in the area, the total shares issued for the area, and the total allowable catch for the area (TAC).⁸ In mathematical terms, an individual's allocation of halibut individual fishing quota in the area for a year will be determined as follows:

$$F_{ij} = [(Q_{ij} / Q_j) \times (T_j - CQ_j)] - O_{ij}$$

Where:

F_{ij}	=	individual i's pounds of IFQ in area j.
Q_{ij}	=	individual i's QS holdings in area j.
Q_j	=	Total QS issued in area j.
T_j	=	The fixed gear TAC for area j.
CQ_j	=	Any Community Development Quota for area j.
O_{ij}	=	Any overage for person i in area j in the previous year.

The current IFQ plan also calls for QS and IFQ to be vessel class specific. The vessel classes in the current halibut plan are defined as follows:

I. Halibut Catcher Vessel Categories

- a. Vessels less than or equal to 35 feet length overall.

⁸As noted in Part I and Part II of this report, CDQ and CDQ compensation will likely mean that quota shares will not be exactly equal to qualifying pounds. CDQ and CDQ compensation have not been considered in this analysis, as a precise formula for CDQ compensation has not been explicitly worked out by the plan administration.

- b. Vessels greater than 35 and less than or equal to 60 feet length overall.
- c. Vessels greater than 60 feet length overall.

II. Freezer Vessels

The vessel classes in the current sablefish IFQ plan are defined as follows:

I. Sablefish Catcher Vessel Categories

- a. Vessels less than or equal to 60 feet length overall.
- b. Vessels greater than 60 feet length overall.

II. Freezer Vessels

Under the IFQ plan, QS allocated to a vessel class can only be transferred within that class.⁹ This constraint would be part of the bundle of use-privileges attached to a quota share upon initial issuance and would remain with that quota share thereafter. Catcher vessel QS cannot be transferred for use by another vessel class. For a more complete description of the current IFQ plans see the recently adopted "final rule."

1.3.2 Alternative 2: Modified Block Proposal for Halibut

The modified block proposal for halibut would retain most of the features of the current IFQ program. The same ownership constraints and the same catcher vessel size categories would continue to apply. Again, permanent trading of QS would not be allowed across catcher vessel classes.

In addition, the modified block proposed amendment would add the following features to the halibut IFQ plan in an effort to ensure that a diverse group of operations will remain in the fishery.

- A. Under the Modified Block proposed amendment, initial allocations of QS worth less than 20,000 pounds of halibut IFQ in the implementation year will be placed into blocks. With the exception of the "sweeping up" provisions noted below, QS that is placed into a block will remain permanently in that block. For transfers, the entire block will need to be transferred.
- B. A "sweeping up" provision for halibut will allow very small blocks to be combined into a fishable amount. The rule used is the same as that used in the Sitka and Full/Partial Block proposals. Blocks with QS worth less than 1,000 pounds of halibut in the first-year of the program can be combined as long as the resulting block does not contain QS that would be (or would have been) worth more than 1,000 pounds of IFQ in the first year of the program.

⁹The final rule for the Council's IFQ program allows the use of catcher vessel IFQ on a freezer-longliner as long as no frozen product is onboard during the trip (see 50CFR Section 676.22, subpart i(3) in the Federal Register, 58 (215) 59375-59413). However, the Council recently voted to eliminate this provision for halibut and making it more restrictive for sablefish (personal communication with Jay Ginter).

- C. Under the Modified Block proposed amendment, initial allocations of halibut QS worth 20,000 pounds or more of IFQ in the implementation year will not be placed into blocks. These "unblocked" QS are divisible and tradeable under the same rules as the current IFQ plan.
- D. Under the Modified Block proposed amendment, new ownership constraints would be added. Persons may hold up to two halibut blocks for an area as long as they do not hold any unblocked QS for the area. If a person holds some unblocked QS for an area, that person can hold only one block for the area.

1.3.3 Alternative 3: Modified Block Proposal for Sablefish

The Modified Block proposed amendment for sablefish would retain most of the features of the current IFQ program. The same ownership constraints and the same catcher-boat size categories would continue to apply. Again, permanent trading of QS would not be allowed across catcher vessel classes.

In addition, the Modified Block proposed amendment would add the following features to the sablefish IFQ plan in an effort to ensure that a diverse group of operations will remain in the fishery.

- A. Under the Modified Block proposed amendment, initial allocations of QS worth less than 20,000 pounds of sablefish IFQ in the implementation year will be placed into blocks. With the exception of the "sweeping up" provisions noted below, QS that is placed into a block will remain permanently in that block. For transfers, the entire block will need to be transferred.
- B. The sweeping up provision for sablefish will allow very small blocks to be combined into a fishable amount. The rule used is the same as that used in the Sitka and Full/Partial Block proposals for "sweeping up." Blocks with QS worth less than 3,000 pounds of sablefish in the first-year of the program can be combined as long as the resulting block does not contain QS that would be (or would have been) worth more than 3,000 pounds of IFQ in the first-year of the program.
- C. Under the Modified Block proposed amendment for sablefish, initial allocations of sablefish QS worth 20,000 pounds or more of IFQ in the implementation year will not be placed into blocks. These "unblocked" QS are tradeable and divisible as in the current IFQ plan.
- D. Under the Modified Block sablefish proposed amendment, new ownership constraints would be added. Persons may hold up to two sablefish blocks for an area as long as they do not hold any unblocked QS for the area. If a person holds some unblocked QS for an area, that person can hold only one block of QS for the area.

1.4 Initial Distribution of QS/IFQ

The following tables provide estimates of the initial distribution of QS/IFQ by area and IFQ category and the distribution of QS/IFQ after the sweep-up occurs. The tables were calculated using current estimates of qualifying pounds and assuming 1991 TACs. The tables also assume the same vessel category restrictions in the current IFQ plan and in the Modified Block proposed amendment.¹⁰

Table 1.4-1 provides the initial distribution of halibut QS/IFQ holders by area and IFQ category under the assumptions noted above. These estimates are shown under the "Current Status" heading. The "After Consolidation" heading provides similar estimates assuming that the consolidation of blocks below 1,000 pounds of IFQ has occurred. As can be seen, this sweep-up may lead to a considerable reduction in QS holders, particularly in Areas 2C and 3A.

Note that a few persons in each area continue to have less than 1,000 pounds of IFQ after the "sweep-up". This is because the sweep-up estimation methodology leaves one person in each "vessel category" within an area with a "remainder" block which is worth less than 1,000 pounds.¹¹

Table 1.4-2 provides estimates of the initial distribution of halibut IFQ by area and IFQ category under the assumptions noted above. These estimates are under the "Current Status" heading. The table also provides estimates of the distribution of halibut IFQ after the sweep-up in the "After Consolidation" column.

In comparing Table 1.4-1 with Table 1.4-2 note that a high percentage of the initial halibut QS/IFQ holders are in the under 1,000 pounds IFQ category, but a relatively small percentage of halibut IFQ holdings are in this category.

Tables 1.4-3 and 1.4-4 provide similar information for the sablefish fishery. Table 1.4-3 provides the initial distribution of sablefish QS/IFQ holders by area and IFQ category under the assumptions noted above. These estimates are shown under the "Current Status" heading. The "After Consolidation" heading provides similar estimates assuming that the consolidation of blocks below 3,000 pounds of IFQ has occurred. As can be seen, this "sweep-up" may lead to a considerable reduction in QS holders, particularly in the Central Gulf and Southeast Outside regulatory districts.

Note that a few persons in each area continue to have less than 3,000 pounds of IFQ after the sweep-up. This is because the sweep-up estimation methodology leaves one person in each "vessel category" within an area with a "remainder" block which is worth less than 3,000 pounds.

Table 1.4-4 provides estimates of the initial distribution of sablefish IFQ by area and IFQ category. These estimates are shown under the "Current Status" heading. The Table also provides estimates of the distribution of sablefish IFQ after the sweep-up of small blocks in the "After Consolidation" column.

¹⁰ Again, the actual distribution when the program is implemented may vary from these estimates. This is because the actual distribution of qualifying pounds may vary from current estimates and because TACs in the implementation year likely will be somewhat different than the 1991 TACs assumed here. Final decisions regarding CDQ compensation will also affect the initial distribution of QS. See the Appendix.

¹¹ The sweep-up estimation methodology is explained in Chapter 3.

When comparing Table 1.4-1 with Table 1.4-2, note that the distribution of the initial sablefish QS/IFQ holders by IFQ category is quite different than the initial distribution of IFQ by IFQ category. Again, there are a relatively large number of QS/IFQ holders with relatively small QS/IFQ holdings.

TABLE 1.4-1.

Distribution of halibut IFQs assuming 1991 TACs. The table shows the number of persons: 1) as they currently stand, and 2) after the blocks under 1,000 lbs. IFQ are consolidated within vessel classes.

Halibut Mgmt Area	IFQs (1000s)	Current Status		After Consolidation	
		Number in Class	Percent	Number in Class	Percent
2C	< 0.5	767	32.3	2	0.1
	0.5-1.0	309	13.0	2	0.1
	1-5	802	33.8	1,171	70.2
	5-10	308	13.0	308	18.5
	10-20	155	6.5	155	9.3
	20-30	25	1.1	25	1.5
	30-40	*	*	*	*
	40-50	*	*	*	*
		2,371		1,668	
3A	< 0.5	1,018	31.5	3	0.1
	0.5-1.0	280	8.7	2	0.1
	1-5	880	27.2	1,256	54.3
	5-10	359	11.1	359	15.5
	10-20	320	9.9	320	13.8
	20-30	124	3.8	124	5.4
	30-40	84	2.6	84	3.6
	40-50	47	1.5	47	2.0
	50-60	32	1.0	32	1.4
	60-70	24	0.7	24	1.0
	70-80	20	0.6	20	0.9
	80-90	16	0.5	16	0.7
	90-100	7	0.2	7	0.3
	>= 100	19	0.6	19	0.8
		3,230		2,313	
3B	< 0.5	118	13.3	1	0.1
	0.5-1.0	97	10.9	2	0.3
	1-5	297	33.5	395	51.2
	5-10	132	14.9	132	17.1
	10-20	112	12.6	112	14.5
	20-30	60	6.8	60	7.8
	30-40	24	2.7	24	3.1
	40-50	18	2.0	18	2.3
	50-60	9	1.0	9	1.2
	60-70	*	*	*	*
	70-80	7	0.8	7	0.9
	80-90	*	*	*	*
	>= 100	7	0.8	7	0.9
		886		772	
4A	< 0.5	48	13.8	1	0.3
	0.5-1.0	46	13.3	3	1.0
	1-5	142	40.9	185	61.7
	5-10	58	16.7	58	19.3
	10-20	40	11.5	40	13.3
	20-30	9	2.6	9	3.0
	30-40	*	*	*	*
	40-50	*	*	*	*
		347		300	

(con't)

TABLE 1.4-1 (con't).

Distribution of halibut IFQs assuming 1991 TACs. The table shows the number of persons: 1) as they currently stand, and 2) after the blocks under 1,000 lbs. IFQ are consolidated within vessel classes.

Halibut Mgmt Area	IFQs (1000s)	Current Status		After Consolidation	
		Number in Class	Percent	Number in Class	Percent
4B	< 0.5	12	7.7	1	0.7
	0.5-1.0	9	5.8	2	1.4
	1-5	52	33.5	60	41.4
	5-10	34	21.9	34	23.4
	10-20	25	16.1	25	17.2
	20-30	8	5.2	8	5.5
	30-40	4	2.6	4	2.8
	40-50	*	*	*	*
	50-60	5	3.2	5	3.4
	70-80	*	*	*	*
	80-90	*	*	*	*
		-----		-----	
		155		145	
4C	< 0.5	8	9.8	1	1.3
	0.5-1.0	6	7.3	1	1.3
	1-5	34	41.5	39	52.0
	5-10	18	22.0	18	24.0
	10-20	8	9.8	8	10.7
	20-30	5	6.1	5	6.7
	30-40	*	*	*	*
	40-50	*	*	*	*
	50-60	*	*	*	*
		-----		-----	
		82		75	
4D	< 0.5	7	10.6	.	.
	0.5-1.0	*	*	2	3.3
	1-5	21	31.8	22	36.1
	5-10	20	30.3	20	32.8
	10-20	9	13.6	9	14.8
	20-30	3	4.5	3	4.9
	30-40	*	*	*	*
	40-50	*	*	*	*
		-----		-----	
		66		61	
4E	< 0.5	117	75.5	4	7.5
	0.5-1.0	11	7.1	.	.
	1-5	23	14.8	45	84.9
	5-10	4	2.6	4	7.5
		-----		-----	
		155		53	
		=====		=====	
All Areas Total		7,292		5,387	

Note: Asterisks have been inserted to preserve confidential data

TABLE 1.4-2.

Distribution of halibut IFQs assuming 1991 TACs. The table shows the sum of IFQs: 1) as they currently stand, and 2) after the blocks under 1,000 lbs. IFQ are consolidated within vessel classes.

Halibut Mgmt Area	Current Status			After Consolidation	
	IFQs (1000s)	IFQ lbs. in Class	Percent	IFQ lbs. in Class	Percent
2C	< 0.5	147,141	2.0	527	0.0
	0.5-1.0	223,551	3.0	1,166	0.0
	1-5	2,010,571	27.2	2,379,571	32.2
	5-10	2,116,655	28.6	2,116,655	28.6
	10-20	2,106,103	28.5	2,106,103	28.5
	20-30	619,752	8.4	619,752	8.4
	30-40	*	*	*	*
	40-50	*	*	*	*
		-----		-----	
		7,400,000		7,400,000	
3A	< 0.5	175,153	0.7	772	0.0
	0.5-1.0	203,100	0.8	1,481	0.0
	1-5	2,174,012	8.2	2,550,012	9.6
	5-10	2,608,511	9.8	2,608,511	9.8
	10-20	4,415,005	16.6	4,415,005	16.6
	20-30	3,031,070	11.4	3,031,070	11.4
	30-40	2,876,176	10.8	2,876,176	10.8
	40-50	2,093,049	7.9	2,093,049	7.9
	50-60	1,757,812	6.6	1,757,812	6.6
	60-70	1,560,944	5.9	1,560,944	5.9
	70-80	1,483,937	5.6	1,483,937	5.6
	80-90	1,377,433	5.2	1,377,433	5.2
	90-100	672,509	2.5	672,509	2.5
	>= 100	2,171,288	8.2	2,171,288	8.2
		-----		-----	
		26,600,000		26,600,000	
3B	< 0.5	28,409	0.3	344	0.0
	0.5-1.0	71,529	0.8	1,594	0.0
	1-5	783,792	8.9	881,792	10.0
	5-10	958,907	10.9	958,907	10.9
	10-20	1,572,897	17.9	1,572,897	17.9
	20-30	1,513,668	17.2	1,513,668	17.2
	30-40	844,330	9.6	844,330	9.6
	40-50	787,376	8.9	787,376	8.9
	50-60	478,299	5.4	478,299	5.4
	60-70	*	*	*	*
	70-80	513,998	5.8	513,998	5.8
	80-90	*	*	*	*
	>= 100	907,524	10.3	907,524	10.3
		-----		-----	
		8,800,000		8,800,000	
4A	< 0.5	10,784	0.6	489	0.0
	0.5-1.0	34,647	2.0	1,942	0.1
	1-5	350,628	20.6	393,628	23.2
	5-10	410,629	24.2	410,629	24.2
	10-20	544,059	32.0	544,059	32.0
	20-30	211,222	12.4	211,222	12.4
	30-40	*	*	*	*
	40-50	*	*	*	*
		-----		-----	
		1,700,000		1,700,000	

(con't)

TABLE 1.4-2 (con't).

Distribution of halibut IFQs assuming 1991 TACs. The table shows the sum of IFQs: 1) as they currently stand, and 2) after the blocks under 1,000 lbs. IFQ are consolidated within vessel classes.

Halibut Mgmt Area	Current Status			After Consolidation	
	IFQs (1000s)	IFQ lbs. in Class	Percent	IFQ lbs. in Class	Percent
4B	< 0.5	2,670	0.2	30	0.0
	0.5-1.0	6,739	0.4	1,378	0.1
	1-5	136,867	8.1	144,867	8.5
	5-10	254,216	15.0	254,216	15.0
	10-20	345,091	20.3	345,091	20.3
	20-30	200,255	11.8	200,255	11.8
	30-40	142,791	8.4	142,791	8.4
	40-50	*	*	*	*
	50-60	271,194	16.0	271,194	16.0
	70-80	*	*	*	*
	80-90	*	*	*	*
		-----		-----	
		1,700,000		1,700,000	
4C	< 0.5	1,666	0.3	474	0.1
	0.5-1.0	4,374	0.7	566	0.1
	1-5	94,545	15.8	99,545	16.6
	5-10	131,120	21.9	131,120	21.9
	10-20	107,510	17.9	107,510	17.9
	20-30	132,804	22.1	132,804	22.1
	30-40	*	*	*	*
	40-50	*	*	*	*
	50-60	*	*	*	*
		-----		-----	
		600,000		600,000	
4D	< 0.5	1,740	0.3	*	*
	0.5-1.0	*	*	1,494	0.2
	1-5	59,219	9.9	60,219	10.0
	5-10	144,096	24.0	144,096	24.0
	10-20	124,567	20.8	124,567	20.8
	20-30	73,242	12.2	73,242	12.2
	30-40	*	*	*	*
	40-50	*	*	*	*
		-----		-----	
		600,000		600,000	
4E	< 0.5	15,616	15.6	770	0.8
	0.5-1.0	7,153	7.2	*	*
	1-5	49,988	50.0	71,988	72.0
	5-10	27,243	27.2	27,243	27.2
		-----		-----	
		100,000		100,000	
		=====		=====	
All Areas Total		47,500,000		47,500,000	

43.9

56.6

55

100

(47% of total
blocked)

Note: Asterisks have been inserted to preserve confidential data

TABLE 1.4-3.

Distribution of sablefish IFQs assuming 1991 TACs. The table shows the number of persons: 1) as they currently stand, and 2) after the blocks under 3,000 lbs. IFQ are consolidated within each vessel class.

	Current Status		After Consolidation		
Sablefish Mgmt Area	IFQs (1000s)	Number in Class	Percent	Number in Class	Percent
Aleutians	< 1.0	14	10.2	1	0.8
	1-3	13	9.5	2	1.7
	3-5	14	10.2	22	18.2
	5-10	22	16.1	22	18.2
	10-20	23	16.8	23	19.0
	20-30	11	8.0	11	9.1
	30-40	6	4.4	6	5.0
	40-50	9	6.6	9	7.4
	50-60	4	2.9	4	3.3
	60-70	3	2.2	3	2.5
	70-80	*	*	*	*
	80-90	*	*	*	*
	90-100	*	*	*	*
	>= 100	13	9.5	13	10.7
	-----		-----		
	137		121		
Bering Sea	< 1.0	37	24.0	2	1.7
	1-3	16	10.4	1	0.8
	3-5	9	5.8	23	19.5
	5-10	21	13.6	21	17.8
	10-20	27	17.5	27	22.9
	20-30	10	6.5	10	8.5
	30-40	11	7.1	11	9.3
	40-50	4	2.6	4	3.4
	50-60	6	3.9	6	5.1
	60-70	*	*	*	*
	70-80	*	*	*	*
	90-100	*	*	*	*
	>= 100	6	3.9	6	5.1
		-----		-----	
	154		118		
Central Gulf	< 1.0	184	28.9	1	0.2
	1-3	88	13.8	2	0.5
	3-5	35	5.5	106	24.2
	5-10	45	7.1	45	10.3
	10-20	71	11.2	71	16.2
	20-30	37	5.8	37	8.4
	30-40	28	4.4	28	6.4
	40-50	19	3.0	19	4.3
	50-60	16	2.5	16	3.7
	60-70	16	2.5	16	3.7
	70-80	15	2.4	15	3.4
	80-90	9	1.4	9	2.1
	90-100	12	1.9	12	2.7
	>= 100	61	9.6	61	13.9
	-----		-----		
	636		438		
Southeast Outside	< 1.0	137	21.2	1	0.2
	1-3	77	11.9	3	0.6
	3-5	60	9.3	122	24.4
	5-10	101	15.6	101	20.2
	10-20	111	17.2	111	22.2
	20-30	60	9.3	60	12.0

(con't)

TABLE 1.4-3 (con't).

Distribution of sablefish IFQs assuming 1991 TACs. The table shows the number of persons: 1) as they currently stand, and 2) after the blocks under 3,000 lbs. IFQ are consolidated within each vessel class.

Sablefish Mgmt Area	IFQs (1000s)	Current Status		After Consolidation	
		Number in Class	Percent	Number in Class	Percent
Southeast Outside (con't)	30-40	29	4.5	29	5.8
	40-50	20	3.1	20	4.0
	50-60	17	2.6	17	3.4
	60-70	7	1.1	7	1.4
	70-80	6	0.9	6	1.2
	80-90	5	0.8	5	1.0
	90-100	4	0.6	4	0.8
	>= 100	13	2.0	13	2.6
		-----		-----	
		647		499	
Western Gulf	< 1.0	30	16.2	2	1.3
	1-3	19	10.3	1	0.7
	3-5	12	6.5	26	17.0
	5-10	30	16.2	30	19.6
	10-20	39	21.1	39	25.5
	20-30	14	7.6	14	9.2
	30-40	14	7.6	14	9.2
	40-50	7	3.8	7	4.6
	60-70	3	1.6	3	2.0
	70-80	*	*	*	*
	90-100	*	*	*	*
	>= 100	12	6.5	12	7.8
		-----		-----	
		185		153	
West Yakutat	< 1.0	94	23.1	3	1.0
	1-3	57	14.0	1	0.3
	3-5	34	8.4	79	25.9
	5-10	60	14.7	60	19.7
	10-20	51	12.5	51	16.7
	20-30	27	6.6	27	8.9
	30-40	21	5.2	21	6.9
	40-50	11	2.7	11	3.6
	50-60	10	2.5	10	3.3
	60-70	7	1.7	7	2.3
	70-80	6	1.5	6	2.0
	80-90	6	1.5	6	2.0
	90-100	5	1.2	5	1.6
	>= 100	18	4.4	18	5.9
		-----		-----	
		407		305	
Unknown	< 1.0	25	100.0	.	.
		=====		=====	
All Areas Total		2,191		1,634	

Notes: This table includes persons who were originally assigned IFQs of 0 due to their small amount of quota shares (blocks).

Asterisks have been inserted to preserve confidential data

TABLE 1.4-4.

Distribution of sablefish IFQs assuming 1991 TACs. The table shows the sum of IFQs: 1) as they currently stand, and 2) after the blocks under 3,000 lbs. IFQ are consolidated in each vessel class.

Sablefish Mgmt Area	Current Status			After Consolidation	
	IFQs (1000s)	IFQ lbs. in Class	Percent	IFQ lbs. in Class	Percent
Aleutians	< 1.0	5,203	0.1	502	0.0
	1-3	23,545	0.4	4,246	0.1
	3-5	55,269	1.0	79,269	1.5
	5-10	158,048	3.0	158,048	3.0
	10-20	320,725	6.1	320,725	6.1
	20-30	282,828	5.3	282,828	5.3
	30-40	203,308	3.8	203,308	3.8
	40-50	400,929	7.6	400,929	7.6
	50-60	211,487	4.0	211,487	4.0
	60-70	191,359	3.6	191,359	3.6
	70-80	*	*	*	*
	80-90	*	*	*	*
	90-100	*	*	*	*
	>= 100	2,994,266	56.6	2,994,266	56.6
		5,291,062		5,291,062	
Bering Sea	< 1.0	13,801	0.4	295	0.0
	1-3	30,335	0.9	1,841	0.1
	3-5	32,099	0.9	74,099	2.2
	5-10	166,337	4.9	166,337	4.9
	10-20	391,625	11.5	391,625	11.5
	20-30	248,106	7.3	248,106	7.3
	30-40	366,030	10.7	366,030	10.7
	40-50	176,148	5.2	176,148	5.2
	50-60	336,885	9.9	336,885	9.9
	60-70	*	*	*	*
	70-80	*	*	*	*
	90-100	*	*	*	*
	>= 100	1,150,382	33.7	1,150,382	33.7
		3,417,152		3,417,152	
Central Gulf	< 1.0	54,454	0.3	506	0.0
	1-3	162,655	0.9	3,603	0.0
	3-5	132,276	0.7	345,276	1.9
	5-10	326,171	1.7	326,171	1.7
	10-20	1,038,852	5.6	1,038,852	5.6
	20-30	925,601	5.0	925,601	5.0
	30-40	984,288	5.3	984,288	5.3
	40-50	834,838	4.5	834,838	4.5
	50-60	878,004	4.7	878,004	4.7
	60-70	1,023,772	5.5	1,023,772	5.5
	70-80	1,113,213	6.0	1,113,213	6.0
	80-90	766,297	4.1	766,297	4.1
	90-100	1,147,759	6.2	1,147,759	6.2
	>= 100	9,262,627	49.7	9,262,627	49.7
		18,650,806		18,650,806	
Southeast Outside	< 1.0	40,961	0.4	691	0.0
	1-3	151,037	1.5	5,308	0.1
	3-5	232,806	2.2	418,806	4.0
	5-10	717,112	6.9	717,112	6.9
	10-20	1,620,161	15.6	1,620,161	15.6
	20-30	1,454,948	14.0	1,454,948	14.0

(con't)

TABLE 1.4-4 (con't).

Distribution of sablefish IFQs assuming 1991 TACs. The table shows the sum of IFQs: 1) as they currently stand, and 2) after the blocks under 3,000 lbs. IFQ are consolidated in each vessel class.

Sablefish Mgmt Area	IFQs (1000s)	Current Status		After Consolidation	
		IFQ lbs. in Class	Percent	IFQ lbs. in Class	Percent
Southeast Outside (con't)	30-40	998,948	9.6	998,948	9.6
	40-50	908,383	8.8	908,383	8.8
	50-60	925,249	8.9	925,249	8.9
	60-70	453,045	4.4	453,045	4.4
	70-80	460,254	4.4	460,254	4.4
	80-90	418,918	4.0	418,918	4.0
	90-100	374,385	3.6	374,385	3.6
	>= 100	1,612,224	15.5	1,612,224	15.5
		-----		-----	
		10,368,432		10,368,432	
Western Gulf	< 1.0	10,891	0.2	122	0.0
	1-3	34,215	0.7	2,984	0.1
	3-5	46,649	0.9	88,649	1.7
	5-10	220,482	4.3	220,482	4.3
	10-20	591,097	11.5	591,097	11.5
	20-30	359,570	7.0	359,570	7.0
	30-40	481,485	9.3	481,485	9.3
	40-50	316,801	6.1	316,801	6.1
	60-70	189,750	3.7	189,750	3.7
	70-80	*	*	*	*
	90-100	*	*	*	*
	>= 100	2,495,453	48.4	2,495,453	48.4
		-----		-----	
		5,158,654		5,158,654	
West Yakutat	< 1.0	31,151	0.4	1,002	0.0
	1-3	106,659	1.3	1,808	0.0
	3-5	134,525	1.6	269,525	3.2
	5-10	453,883	5.4	453,883	5.4
	10-20	747,007	8.8	747,007	8.8
	20-30	653,377	7.7	653,377	7.7
	30-40	750,005	8.8	750,005	8.8
	40-50	470,087	5.5	470,087	5.5
	50-60	533,293	6.3	533,293	6.3
	60-70	458,226	5.4	458,226	5.4
	70-80	456,793	5.4	456,793	5.4
	80-90	503,244	5.9	503,244	5.9
	90-100	476,392	5.6	476,392	5.6
	>= 100	2,706,565	31.9	2,706,565	31.9
		-----		-----	
		8,481,207		8,481,207	
All Areas Total		=====		=====	
		51,367,312		51,367,312	

Notes: This table includes persons who were originally assigned IFQs of 0 due to their small amount of quota shares (blocks).

Asterisks have been inserted to preserve confidential data

2.0 NEPA REQUIREMENTS: ENVIRONMENTAL IMPACTS OF THE ALTERNATIVES

An environmental assessment (EA) is required by the National Environmental Policy Act of 1969 (NEPA) to determine whether the action considered will result in significant impact on the human environment. The environmental analysis in the EA provides the basis for this determination and must analyze the intensity or severity of the impact of an action and the significance of an action with respect to society as a whole, the affected region and interests, and the locality.

If the action is determined not to be significant based on an analysis of relevant considerations, the EA and resulting finding of no significant impact (FONSI) would be the final environmental documents required by NEPA. An environmental impact study (EIS) must be prepared if the proposed action may cause a significant impact on the quality of the human environment.

An EA must include a brief discussion of the need for the proposal, the alternatives considered, the environmental impacts of the proposed action and the alternatives, and a list of document preparers. The purpose and alternatives were discussed in Sections 1.2 through 1.3, and the list of preparers is in Chapter 8. This chapter contains the discussion of the environmental impacts of the alternatives including impacts on threatened and endangered species and marine mammals.

2.1 Environmental Impacts of the Alternatives

Alternatives 2 and 3, the Modified Block proposed amendments for halibut and sablefish, would not alter the initial distribution of QS relative to the current IFQ programs (Alternative 1). These alternatives could however impact the future distribution of QS, as they add some new constraints on QS ownership and transferability.

Chapter 3 of this report indicates that maximum potential consolidation in the sablefish and halibut fisheries is expected to decrease under these alternatives relative to the current plan. If actual consolidation is related to maximum potential consolidation, then it is likely that there will be more fishing operations remaining in these fisheries under the Modified Block alternatives than under the status quo.

Nevertheless, the Modified Block proposal maintains the essential elements of an IFQ program, and as such should reduce or eliminate many of the problems associated with the "race for the fish." Thus the environmental impacts of the Modified Block proposed amendment are not expected to be substantially different than the current IFQ programs that has been approved by the Secretary of Commerce. Sections 2.2.19 through 2.2.27 of the Supplemental Analysis describe potential conservation and environmental impacts of the status quo.

2.2 Impacts on Threatened or Endangered Species

The following species, currently listed under the ESA, are present in the BSAI and GOA management areas.

Endangered

Northern right whale	<i>Balaena glacialis</i>
Gray whale	<i>Eschrichtius robustus</i>
Sei whale	<i>Balaenoptera borealis</i>
Blue whale	<i>Balaenoptera musculus</i>
Fin whale	<i>Balaenoptera physalus</i>
Humpback whale	<i>Megaptera novaeangliae</i>
Sperm whale	<i>Physeter macrocephalus</i>
Snake River sockeye salmon	<i>Oncorhynchus nerka</i>
Short-tailed albatross	<i>Diomedea albatrus</i>

Threatened

Steller sea lion	<i>Eumetopias jubatus</i>
Snake R. spring/summer chinook salmon	<i>Oncorhynchus tshawytscha</i>
Snake R. fall chinook salmon	<i>Oncorhynchus tshawytscha</i>
Spectacled eider	<i>Somateria fischeri</i>

To date, critical habitat has only been designated for the Steller sea lion.

Other sensitive seabird/marine bird species are listed below and include Category 1 and Category 2 species. Category 1 species are eligible for listing and await only the processing of higher priority species. Category 2 species are currently under review by the Fish and Wildlife Service for possible listing. Steller's eider is a category 1 species; all others are category 2 species.

Steller's eider	<i>Polysticta stelleri</i>
Marbled murrelet	<i>Brachyramphus marmoratus</i>
Red-legged kittiwake	<i>Rissa brevirostris</i>
Kittlitz's murrelet	<i>Brachyramphus brevirostris</i>

Status of Section 7 Consultations for above listed species:

Cetaceans: Formal consultation on the effects of the GOA groundfish fishery on listed cetaceans was concluded on April 19, 1991. The biological opinion issued for that consultation considered all aspects of the fishery and concluded that the fishery was unlikely to adversely affect listed cetaceans. The April 19, 1991, biological opinion on the effects of the BSAI groundfish fishery on listed species did not specifically evaluate effects to listed cetaceans in any detail. Instead it incorporated by reference, an earlier biological opinion on the effects of the BSAI groundfish fishery on cetaceans, issued December 14, 1979, and the biological opinion issued July 5, 1989, on the marine mammal exemption program. The April 19, 1991, BSAI opinion reiterated the conclusion of these earlier opinions that the BSAI groundfish fishery was unlikely to jeopardize listed cetaceans. Unless there is some change in the GOA or BSAI fishery or information on cetaceans that would indicate an

effect or relationship exists that we have not previously considered, it is not necessary to reinitiate consultation for these species.

Salmon: Effects of the GOA and BSAI groundfish fisheries on listed salmon were considered by informal consultations with the NMFS Northwest Region for fishing years 1992 and 1993 (February 20, 1992, April 21, 1993, respectively). In addition to the environmental assessment documents on the fisheries, the Alaska Region wrote a biological assessment (March 17, 1993) and the decisional document that accompanied the April 21, 1993, memorandum concluding that salmon species listed under the ESA were not likely to be adversely affected by the 1993 TACs, or by a change of the non-rope pollock fishing season in the BSAI. Subsequent informal Section 7 consultation occurred for BSAI Amendment 28 (June 7, 1993), and for GOA Amendment 31 (September 22, 1993).

Consultation for fishing year 1994 and for future years needs to be addressed. The Northwest Region stated their intention to rely on multiple-year consultations when the effects of an action on listed salmon can be evaluated adequately over the long term. We have also been advocating this approach. Tamra Faris and Jessica Gharrett are writing a biological assessment containing a description of anticipated fishing activities conducted under the FMPs, including annual specification amounts, in multiple-year terms and the current information on potential takings by the fishery of the listed salmon. Peter Dygert, NW Region, has been in contact with us regarding the information assessment and its packaging. When the impact analysis is complete, we should again confer with the NW Region to agree on a time frame for the consultation and to determine whether a formal or informal consultation is required. At a minimum, the process will be completed before calendar year 1993 ends.

Steller sea lions: Formal consultation on the effects of the BSAI and GOA groundfish fisheries on Steller sea lions was concluded on April 19, 1991. The biological opinions issued for these consultations considered all aspects of the fisheries and concluded that the BSAI and GOA fisheries were unlikely to jeopardize the continued existence and recovery of the Steller sea lion population. Subsequently, Section 7 consultation has been reinitiated for every change to the FMP or fishery that could affect Steller sea lions. Numerous informal consultations have been conducted; formal consultation was reinitiated for FM actions that appeared likely to result in adverse effects. Specifically, formal consultation was conducted and biological opinions issued for: (1) GOA 1991 pollock TAC, June 5, 1991; (2) GOA 1991 pollock fourth quarter allocation, September 20, 1991; (3) 1992 GOA TAC specifications, December 23, 1991; (4) 1992 BSAI TAC specifications, January 21, 1992; and (5) Amendment 18 to the BSAI FMP (inshore/offshore), March 4, 1992. PRMD will continue to track FM actions and will consult, formally and informally, as needed. The next anticipated consultation will consider effects of the 1994 TAC specifications, following the December 1993 meeting of the North Pacific Fishery Management Council.

Seabirds: Formal consultation was concluded on the effects of the NMFS Interim Incidental Take Exemption Program on the short-tailed albatross and other species listed under the ESA and under the jurisdiction of the USDI Fish and Wildlife Service (FWS) on July 3, 1989. That consultation concluded that BSAI and GOA groundfish fisheries would adversely affect the short-tailed albatross and would result in the incidental take of up to two birds per year, but would not jeopardize the continued existence of that species. A technical memorandum dated July 21, 1989, from the FWS to NMFS documented actions intended to reduce incidental take of the marbled murrelet, a species not listed, but a category 2 candidate. Subsequently, Section 7 consultation has been reinitiated for major changes to the FMP or fishery that might affect the short-tailed albatross; these have been informal consultations, and have concluded that no additional adverse impacts beyond those in the aforementioned formal consultation would occur. These subsequent informal consultations include:

(1) 1992 BSAI and GOA TAC specifications, January 17, 1992; (2) 1993 BSAI and GOA TAC specifications, February 1, 1993, and clarified February 12, 1993; (3) delay of the second quarter pollock fishing season in the GOA, December 22, 1992; (4) careful release of halibut in hook-and-line fisheries, March 12, 1993; (5) delay of the second pollock fishing seasons in the BSAI and GOA, March 12, 1993; (6) BSAI Amendment 28, April 14, 1993; (7) GOA Amendment 31, July 21, 1993; and (8) 1994 BSAI and GOA TAC specifications, February 14, 1994.

None of the alternatives considered under this action will affect any of the above listed or candidate species.

2.3 Impacts on Marine Mammals

The Supplemental Analysis notes that under the IFQ program, which is Alternative 1 in this analysis, "the patterns of fishing in this fishery would change from a very brief opening with highly concentrated effort to an extended fishery over both time and space with effort being less concentrated but occurring over a longer time period and possibly over greater areas. Adverse interactions between fisheries and marine mammals have often been thought to be directly related to the concentration of fisheries in time and space. To the extent that is true for the fixed gear halibut and sablefish fisheries, the IFQ program, which will disperse the fishery in time and space, will decrease such effects."¹²

The Supplemental Analysis suggests that it may be less likely that marine mammals and longline gear will be at the same place at the same time if the fishery can be spread out in time and space. There is, however, a possibility that interactions with marine mammals, specifically killer whales, may increase as fishing effort is spread out over time and space.

Dalheim (1988) has documented interactions between longline fishermen and killer whales primarily in Prince William Sound and the Aleutian Islands. The killer whales are opportunistic feeders and learn to recognize the presence of longline gear in the area (by vessels and buoys) and respond to the sound of gear retrieval. As the longline gear is being retrieved and the sablefish are in the upper water column and on the water surface, killer whales may consume fish off the hooks. This results in less harvest to the vessel per unit of gear deployed. The "adverse impacts" occur if fishermen injure killer whales in their attempts to discourage them from feeding on the sablefish.

Some have suggested that confining longline gear to a narrow window of time may limit the amount of gear that is subject to killer whale predation because the whales can only be in one place at a time and there are not enough of them to be present at all gear retrievals.¹³ If so, spreading longline gear retrieval out over time, as is the objective of the IFQ program, may provide a larger window of opportunity for killer whales to prey on the gear as it is being retrieved. However, if this occurs, fishermen will have increased time under an IFQ system to wait until killer whales move away from the area where their gear is set, to deploy dummy gear or to use other methods to distract or dissuade the killer whales.

¹² Supplemental Analysis, page 7-9.

¹³ Personal Communication with Tamra L. Faris, a fishery biologist with the Protected Resources Management Division, NMFS Alaska Region in Juneau, Alaska.

Marine mammal interactions in the longline fisheries for halibut and sablefish are currently monitored through the Marine Mammal Exemption Program (MMEP). Under this program, all longline fisheries in the GOA and BSAI are categorized as to their expected impact on marine mammals. If increased interactions between fishermen and marine mammals occur in the future as a result of the IFQ program or amendments to it, changes in the classification and monitoring of these longline fisheries may be needed.

The Modified Block proposed amendment considered in this analysis is expected to result in less consolidation of IFQ and, therefore, more individual fishing operations. While it is possible that an IFQ program may provide increased opportunities for killer whales to feed off sablefish while longline gear is being retrieved, the extent to which killer whale interactions will change is unknown. The change in fishing effort as a result of the modified block amendment is not expected to result in a significant increase in interactions with marine mammals over and above that which will be experienced under the current IFQ program (status quo).

2.4 Conclusions or Findings of No Significant Impact

Under NEPA an action has a significant impact if it does the following:

- a. jeopardizes the productive capability of the stocks;
- b. damages ocean and coastal habitats
- c. adversely impacts public health or safety
- d. adversely affects endangered species or marine mammals; and/or
- e. has cumulative effects on stocks.

The Modified Block proposed amendments are unlikely to jeopardize the productive capability of the stocks or have cumulative effects on the stocks. Sections 2.2.19 through 2.2.27 of the Supplemental Analysis describe the conservation and environmental impacts of the current IFQ program. The Modified Block amendment may increase the number of fishing operations remaining in the fishery, but will still reduce the "race for the fish" and reduce stock losses associated with fishing mortality due to the lost gear and discarded bycatch.

The increase in the number of fishing operations may increase enforcement problems associated with underreporting, highgrading, and misreporting the area of catch relative to the current IFQ program. Nevertheless, it is currently expected that the plan administrator and fishery managers will be able to contain such problems, should they occur, so that the stocks are not jeopardized. An IFQ program under the Modified Block amendment should not be significantly different than the current program with respect to the need to contain such problems.

The Modified Block amendment should not impact threatened or endangered species relative to the status quo. The IFQ program with the Modified Block amendment is expected to have no impacts on marine mammals relative to the current IFQ program. The Modified Block amendment is not likely to impose significant damages on ocean and coastal habitats.

The Modified Block amendment should not adversely affect public health or safety. Section 2.2.1 in the Supplemental Analysis indicates that the current IFQ program is expected to increase the safety of fishermen "by reducing substantially the incentive fishermen have to disregard factors that increase

the risk of accidents."¹⁴ An IFQ program does this by reducing "the race for the fish" and thereby reducing the opportunity cost of safety. An IFQ program with the Modified Block amendment would provide similar incentives with respect to safety.

In summary, the halibut and sablefish Modified Block proposed amendments are not expected to have significant impacts under NEPA.

¹⁴Supplemental Analysis, page 2-3.

3.0 REGULATORY IMPACT REVIEW: SOCIAL AND ECONOMIC IMPACTS OF THE ALTERNATIVES

This chapter provides information about the economic and socioeconomic impacts of the alternatives including identification of the individuals or groups that may be affected by the action, the nature of the impacts, quantification of the economic impacts if possible, and discussion of the tradeoffs between qualitative and quantitative benefits and costs.

The requirements for all regulatory actions specified in E.O. 12866 are summarized in the following statement from the order:

In deciding whether and how to regulate, agencies should assess all costs and benefits of available regulatory alternatives, including the alternative of not regulating. Costs and benefits shall be understood to include both quantifiable measures (to the fullest extent that these can be usefully estimated) and qualitative measures of costs and benefits that are difficult to quantify, but nevertheless essential to consider. Further, in choosing among regulatory approaches, agencies should select those approaches that maximize net benefits (including potential economic, environment, public health and safety, and other advantages; distributive impacts; and equity), unless a statute requires another regulatory approach.

This chapter also addresses the requirements of both E.O. 12866 and the Regulatory Flexibility Act to provide adequate information to determine whether an action is "significant" under E.O. 12866 or will result in "significant" impacts on small entities under the RFA. E.O. 12866 defines a "significant regulatory action" as likely to result in (1) an annual effect on the economy of \$100 million or more; (2) an adverse effect in a material way on the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local or tribal governments or communities; or (3) a novel legal or policy issue. Requirements of the RFA are addressed in Section 4.

This chapter provides an RIR for the Modified Block proposed amendment alternatives. An objective of the Modified Block proposed amendment is to reduce the potential for consolidation of QS relative to the current plan and to find a means to alter a portion of the QS so that the shares tend to be less attractive to full-time operations. In particular, the proposed amendment seeks to reduce consolidation by placing the QS that are initially worth less than 20,000 pounds of IFQ into blocks and restricting the number of blocks that any person can hold.

While small amounts of QS will be allocated under the current program, and nothing precludes any fisherman from buying a small amount of QS if small amounts are profitable, some fear that consolidation will result in a small number of operations with relatively large holdings.

The Modified Block proposal seeks to guarantee that a large number of small blocks of QS will continue to exist. The existence of a large number of small blocks will ensure that some quota shares will continue to be available to support a part-time fleet and an entry level fishery.

Aspects pertinent to the Modified Block proposed amendment have been explored above. The main focus of this section is to examine to what extent the Modified Block proposed amendment alters the potential for maximum consolidation relative to the current plan.

A more difficult question is how actual consolidation would be altered by the different alternatives. These authors suspect that actual consolidation will be less than the maximum possible consolidation (minimum number of quota share holders) under all alternatives, including the current plan. Nevertheless, actual consolidation is difficult to forecast.

The rough estimates of the maximum potential consolidation contained herein may provide an index of the relative ranking of alternatives with respect to consolidation. The Status Quo alternative used in this analysis is the current IFQ plans for sablefish and halibut. Section 3.1 covers the Status Quo alternative, Section 3.2 covers the Modified Block proposed amendment for halibut and Section 3.3 covers the Modified Block proposed amendment for sablefish.

3.1 Alternative 1: The Status Quo: The Current IFQ Plans

The Modified Block proposal would amend the current IFQ plans for sablefish and halibut. Thus for the purpose of this analysis, the plan is the status quo.

The Supplemental Analysis indicates that the ownership cap¹⁵ restrictions, to the extent that they are enforceable, will prevent the number of QS holders and the number of vessels from falling below the following levels:

Halibut:

1. Area 2C-3B halibut (together): 200 QS owners.
2. Area 4A-4E halibut (together): 200 QS owners.
3. Area 2C halibut: 100 QS owners.
4. All areas (together): 200 QS owners.

Sablefish:

1. EEZ wide sablefish: 100 QS owners and 100 boats.
2. Gulf of Alaska sablefish East of 140° W : 100 QS owners and 100 boats.

This is the maximum possible consolidation that could occur under the program (assuming no cap enforcement problems). The Supplemental Analysis indicated that it was not clear how far consolidation of QS actually would go under the IFQ program. In part, it will depend upon whether or not operations which specialize in the halibut or sablefish fishery will tend to be more profitable with respect to using IFQs than will operations which are more diversified.¹⁶

The Supplemental Analysis used harvesting cost models to help predict the net economic benefits which would result from the halibut IFQ program. The harvesting cost model for halibut was used with vessels that had landings of at least 500 pounds in areas 2C, 3A, 3B, or 4A. Without an IFQ program there were approximately 3,796 vessels in this category in 1990. Among other things, the

¹⁵Information on the ownership caps is provided in Part I and Part II of this report.

¹⁶See the Supplemental Analysis, page 2-45.

harvesting cost model was used to estimate the number of vessels which would remain in the IFQ fishery under different assumptions.

Assuming that there would be consolidations of QS within a vessel category but not across vessel categories, and that each remaining vessel would be involved in the fishery for 200 days a year, the halibut harvesting cost model predicted that the number of vessels would decline from approximately 3,796 vessels to the 147 to 192 vessel range. Using the same assumptions, but allowing consolidation across vessel categories produced an estimate of 72 to 94 vessels. All of these numbers were below the maximum ownership caps set by the Council. *

The halibut harvesting cost model predicted higher remaining fleet levels if each vessel would be involved in the halibut fishery only 50 days a year. Here the estimate ranged from 588 to 768 vessels. Under these assumptions, the ownership caps would not be binding.

The Supplemental Analysis suggested that the number of vessels in the sablefish fishery could fall below 100 in the absence of ownership caps.¹⁷ If so, the ownership caps would be binding and 100 vessels would be the minimum that would occur after maximum consolidation. However, it is unclear that actual consolidation would go that far.

This analysis will concentrate on rough estimates of the maximum potential consolidation under each alternative. For purposes of this analysis, the levels implied by the ownership caps above will be used as the estimates for maximum potential consolidation under the current IFQ plan which is the Status Quo alternative.

3.2 Alternative 2: The Modified Block Proposal for the Halibut Fishery

Alternative 2 is the Modified Block proposed amendment for halibut, which was developed by the Council at its September 1993 meeting. This proposal maintains the four vessel categories in the current halibut IFQ program. These four categories are the freezer-longliner class, the less than or equal to 35 feet catcher vessel class, the greater than 35 to 60 feet catcher vessel class, and the greater than sixty feet catcher vessel class. Permanent transfers of QS across vessel categories are not allowed.

The Modified Block proposal will place initial allocations of QS worth less than 20,000 pounds of halibut IFQ in the implementation year into blocks. QS that is in a block can only be permanently traded as a block.¹⁸

Small blocks with QS worth less than 1,000 pounds of halibut IFQ in the first year of the program can be combined as long as the resulting block is worth 1,000 pounds or less. This has been termed the "sweeping up" provision and is intended to turn all blocks into "fishable" amounts of QS. The same provision existed in the Sitka Block alternatives in Part I and the Full/Partial Block alternatives in Part II.¹⁹

¹⁷See Table 2.2 of the Supplemental Analysis.

¹⁸As in the other block proposals, the IFQ issued to a block can be leased to the extent allowed under the Council's current plan.

¹⁹Note that the "sweeping-up" could occur in any year. The rule on this provision will need to be written with care.

Initial allocations of QS worth 20,000 pounds or more of IFQ in the implementation year will remain "unblocked." Unblocked QS can be traded under the same rules that QS can be traded under the current plan. Unlike blocked QS which must be traded as a whole, persons would be able to sell any portion of their unblocked QS holdings.

The Modified Block proposal would add new ownership constraints to the current IFQ program. Persons could still hold QS up to the ownership constraints in the current plan. However, persons who hold any unblocked QS in an area can only hold one block of QS for that area. Persons who hold no unblocked QS in an area can hold up to two blocks of QS in that area.²⁰

The Council developed the Modified Block proposal at its September 1993 meeting after reviewing Part I of this report on the Sitka Block proposal and Part II of this report on the Full/Partial Block proposal. The Council felt that the Modified Block proposal would achieve the objective of these earlier block proposals with fewer restrictions on the flexibility and economic efficiency of the IFQ program as a whole.

The Modified Block proposal seeks to guarantee that a number of small blocks will be available for new entrants, the small part-time fleet, and diversified operations which want to participate on a part-time basis. Many of these blocks are expected to be unattractive to more full-time operations, given their size and the constraints on holding QS in blocks.

Similarly, persons who want to participate in the halibut fishery on a more full-time basis will be able to trade unblocked halibut QS in the same fashion that they would be able to trade QS under the current IFQ program. For full-time participants, the Modified Block alternative is intended to be more flexible and less restrictive than either the Sitka Block or Full/Partial Block alternatives.

Table 3.2-1 provides estimates of maximum potential consolidation of halibut QS holders under the Modified Block proposal. Estimates of the minimum remaining number of halibut QS holders should maximum potential consolidation occur are provided by area and vessel category with totals by area. The table includes a breakdown of the minimum remaining number of QS holders in the "blocked" and "unblocked" categories. Note that under the estimation procedures described below, a few of the persons holding unblocked QS will also hold one block of QS.

Table 3.2-1 also provides estimates of the initial number of halibut QS holders with a breakout into blocked and unblocked categories. Note that this "initial number" is not the number of QS holders at initial allocation but an estimate of the number of QS holders after the "sweeping-up" provision has been applied.²¹ The sweeping-up provision was assumed to occur entirely among holders of blocked halibut QS.

The estimates of maximum potential consolidation were made assuming that holders of unblocked halibut QS would want to hold the maximum amount allowed under the most binding QS ownership

²⁰Again, with the exception of the "sweeping up" provision.

²¹The minimum number of blocks and blockholders remaining after sweep-up was done by adding up blocks with QS worth less than 1,000 pounds of IFQ in the first year of the program (assuming 1991 TACs) and dividing by 1,000. This will overestimate the amount of consolidation which will occur with the sweep-up. Note also that the sweep-up can occur over time and that the rule for the sweep-up will need to be written with care.

constraint for an area. In the table, the most binding QS ownership constraint for an area is translated into IFQ assuming 1991 TACs.²²

The minimum remaining number of unblocked halibut QS holders (should the maximum possible consolidation occur) was calculated by taking the total amount of unblocked QS and dividing by the most binding ownership constraint. Within an area and vessel class, this left most unblocked QS holders with the maximum amount of QS allowed under the most binding ownership constraint.

However, under this estimation procedure, one unblocked halibut QS holder in each vessel category (the remainder from the division) had less than the maximum QS allowed. This person was assigned a QS block from the category which would bring the person's total QS holdings as close as possible to the most binding ownership constraint without exceeding it.²³

The minimum number of halibut QS block holders should maximum consolidation occur was then calculated by taking the remaining number of blocks in each category, dividing by two, and rounding up to the nearest whole number. This was done because under the proposal, a person who holds no unblocked QS can hold up to two blocks of QS for the area.²⁴

The results of these calculations also can be seen in Table 3.2-1. Over all areas, persons holding halibut QS blocks initially (after sweep-up) are estimated to represent approximately 89.1% (4,802 out of 5,387) of all QS holders. If maximum potential consolidation occurs the number of persons who hold QS blocks only (hold no unblocked QS) would fall by approximately 50%.²⁵

Under the estimation procedures, usually one block in each vessel category is assigned to an unblocked QS holder.²⁶ If maximum potential consolidation occurs, the percentage of QS holders

²²Note that some fishermen may prefer to fish in multiple areas. This methodology assumes that full-time fishermen will try to reach their maximum allowed QS ownership cap with QS holdings in a single area.

²³Note that some persons may be allocated QS which is worth more than the most binding QS ownership cap for an area. With unblocked QS, the methodology used herein assumes that over time, no person will have more than the ownership cap. However, under special circumstances described below, some "blocked" QS may exceed the QS ownership cap.

²⁴Exceptions to this are noted below. If a block would exceed the ownership cap then no further consolidation occurs under the methodology. Such occurrences may be possible depending upon the actual distribution of QS and TACs in the implementation year.

²⁵These estimates are approximate only. The reader should be cautious of the totals across vessel categories, as they do not necessarily represent the number of "unique" QS holders. Recall that these numbers are after "sweep-up" and that some persons will receive initial allocations of QS in more than one IPHC area.

²⁶Three cases where a block does not get combined with unblocked QS can be seen in Table 3.2-1. These are the following:

1. When there are no initial unblocked QS holders (see Area 2C, catcher vessel class <= 35 feet).

who hold QS in blocks only would increase in each category. Thus the percentage of all QS holders who are likely to be part-time fishermen will increase after consolidation.

The estimated number of unblocked QS holders falls by a much larger percentage in each category and area. An individual can buy unblocked QS up to the most binding ownership constraint for an area. Thus the maximum potential consolidation of unblocked halibut QS among full-time participants is much larger on a percentage basis than the maximum potential consolidation of blocked QS.

Under this alternative, the estimated minimum possible number of halibut QS holders should maximum potential consolidation occur is highest in Area 3A at 1,050. This would also represent a rough estimate of the minimum number of QS holders across all areas should maximum potential consolidation occur.²⁷

It should be noted that maximum potential consolidation under the modified block proposal for halibut tends to be somewhat greater than it would be under similar Sitka Block and Full/Partial Block alternatives with a two block rule.²⁸ This is because both the Sitka Block and Full/Partial Block alternatives make it difficult for a full-time operator to obtain enough QS to reach the ownership constraint. Nevertheless, maximum potential consolidation under this halibut Modified Block alternative is less than similar Sitka Block and Full/Partial Block alternatives with a three block per area rule.²⁹

A goal of the Modified Block proposed amendment is to reduce the consolidation of shares relative to the current plan. The results of this analysis suggest that maximum potential consolidation will be less under the Modified Block proposed amendment than it will be under the status quo alternative. The reduction in total consolidation will chiefly be due to the blocked QS rules. Thus the blocks and the ownership constraint on blocks will likely leave more remaining QS holders than will the current IFQ plan.

Table 3.2-2 provides estimates of the amount of IFQ assigned to blocked QS and unblocked QS assuming 1991 TACs. The estimates of the "initial amounts" again represent estimates made after the "sweep-up" of very small blocks. The estimates of the amounts of IFQ in each vessel category should maximum potential consolidation occur were made using the same assumptions noted above.

-
2. When there are initial unblocked QS holders, and the most binding ownership cap for the area translates into 20,000 pounds or more of IFQ in the first year of the program, but where no block of sufficient size is available for combining with unblocked QS (see Area 4C, catcher vessel category > 60 feet.

²⁷It would appear to be very unlikely that the minimum number of remaining QS holders would be this low over all areas under this alternative.

²⁸See Sitka Block alternative 7H on page 79 of Part I and Full/Partial Block alternative 6 on page 163 of Part II. Note that this generalization may not hold for all areas.

²⁹See Sitka Block alternative 4H on page 69 of Part I and Full/Partial Block alternative 7 on page 166 of Part II.

Over all areas, the amount of IFQ resulting from QS in blocks which will be used by "block-only" QS holders is estimated to drop only slightly with consolidation. Initially, approximately 47.3% of the IFQ will be assigned to blocked QS. The amount of QS in blocks will remain unchanged due to consolidation.

However, a small amount of the blocked QS will be taken by unblocked QS holders if maximum consolidation occurs. Assuming 1991 TACs and current estimates of the distribution of qualifying pounds, the amount of halibut IFQ from those QS blocks going to more full-time operations is estimated to be 288,589 pounds in Table 3.2-2.³⁰ Again, these estimates are contingent upon maximum potential consolidation occurring in the fashion described. A different distribution of QS and different TACs would alter these results somewhat.

The Modified Block proposed amendment for the halibut fishery may result in some minor ownership cap anomalies in one or more IPHC areas depending upon the prevailing TACs in the year the program is implemented.³¹ Under the proposal, QS within an area that will be worth less than 20,000 pounds is to be placed into a block. However, it is possible that the most binding halibut QS ownership cap for an area will be less than 20,000 pounds when translated into IFQs. This will depend upon the distribution of QS and prevailing TACs at the time the program is implemented. For a more complete discussion of these complications see the Appendix.

Tables 3.2-1 and 3.2-2 both provide a column indicating the most binding halibut QS ownership constraint for an area translated into IFQs assuming the current estimate of the distribution of QS and 1991 TACs. Under these conditions, the most binding ownership cap for IPHC area 4A would be less than 20,000 pounds.

The final rule allows persons to receive more than the ownership cap at initial allocation but does not allow someone to obtain more than the ownership cap through transfer. Thus when persons who receive more than the ownership cap choose to exit the fishery, they will have to sell off portions of their holdings to more than one person. This will not be possible if a block exceeds the ownership cap due to the Modified Block proposal's rule on transferring blocks.

For purposes of estimating maximum potential consolidation under these conditions and the transfer restrictions in the IFQ plan, the following procedures were used in Area 4A:

1. Persons with initial allocations of QS worth at least 20,000 pounds of IFQ were allocated "unblocked QS." These amounts were summed and divided by the "ownership constraint" to determine the maximum potential consolidation of the unblocked QS holders. Note that this assumes that over time, no person will be left with holdings of unblocked QS in excess of the ownership cap.

³⁰ Again, note that Table 3.2-2 has been estimated using 1991 TACs and current estimates of qualifying pounds. The amount of IFQ associated with blocked and unblocked QS will vary somewhat as TACs and actual qualifying pounds change. The amounts may also change when final decisions regarding CDQ compensation are made.

³¹ As of this writing, NMFS expects that the program to be operational in 1995.

2. Persons with initial allocations of QS worth less than 20,000 pounds of IFQ will have their holdings placed into blocks. Holders of blocks which held amounts of QS no greater than the ownership cap were consolidated as described above. Holders of blocks which held QS greater than the ownership cap that was worth less than 20,000 pounds of IFQ in the initial year of the program were not consolidated.

If the modified block proposal is approved, and this situation occurs when the program is implemented, a few blocks may be created which hold QS in excess of the most binding ownership cap for an area. Under the current rules, these blocks could not be transferred because no person can receive QS through transfer that exceeds the ownership cap. See the Appendix of this section for the alternative chosen to alleviate the problem of nontransferability.

TABLE 3.2-1. Modified Block Proposal: HALIBUT. Estimated maximum consolidation of blocks by vessel category. The estimates of initial quota share holders include the consolidation provisions for blocks under 1,000 lbs. 1FQ. Ownership constraints have been translated into 1FQs using 1991 TACs.

Area	Vessel Length Class	Ownership Constraint (lbs. 1FQ)	Initial QS Holders Blocked	Initial QS Holders Unblocked	Total Initial QS Holders	Estimated Minimum Block Holders	Estimated Minimum Unblocked QS Holders	Total Estimated Minimum QS Holders
2C	<= 35 ft	74,000	744	0	744	372	0	372
	35-60 ft	74,000	859	25	884	429	10	439
	> 60 ft	74,000	30	5	35	15	2	17
	Freezer	74,000	1	0	1	1	0	1
	Unknown	74,000	4	0	4	2	0	2
			1,638	30	1,668	819	12	831
3A	<= 35 ft	214,702	806	6	812	403	1	404
	35-60 ft	214,702	1,005	239	1,244	502	46	548
	> 60 ft	214,702	120	126	246	60	33	93
	Freezer	214,702	5	2	7	2	1	3
	Unknown	214,702	4	0	4	2	0	2
			1,940	373	2,313	969	81	1,050
3B	<= 35 ft	248,292	137	0	137	69	0	69
	35-60 ft	248,292	400	59	459	200	9	209
	> 60 ft	248,292	99	70	169	49	14	63
	Freezer	248,292	6	1	7	3	1	4
			642	130	772	321	24	345
4A	<= 35 ft	19,154	72	0	72	36	0	36
	35-60 ft	19,154	129	3	132	65	5	70
	> 60 ft	19,154	82	10	92	41	15	56
	Freezer	19,154	4	0	4	2	0	2
			287	13	300	144	20	164
4B	<= 35 ft	30,387	23	0	23	12	0	12
	35-60 ft	30,387	45	6	51	22	8	30
	> 60 ft	30,387	52	16	68	26	23	49
	Freezer	30,387	2	1	3	1	2	3
			122	23	145	61	33	94

(con't)

TABLE 3.2-1 (con't).

Modified Block Proposal: HALIBUT.

Estimated maximum consolidation of blocks by vessel category. The estimates of initial quota share holders include the consolidation provisions for blocks under 1,000 lbs. IFQ. Ownership constraints have been translated into IFQs using 1991 TACs.

Area	Vessel Length Class	Ownership Constraint (lbs. IFQ)	Initial QS Holders Blocked	Initial QS Holders Unblocked	Total Initial QS Holders	Estimated Minimum Block Holders	Estimated Minimum Unblocked QS Holders	Total Estimated Minimum QS Holders
4C	<= 35 ft	23,673	25	2	27	12	3	15
	35-60 ft	23,673	24	3	27	12	4	16
	> 60 ft	23,673	16	3	19	8	5	13
	Freezer	23,673	2	0	2	1	0	1
			67	8	75	33	12	45
4D	<= 35 ft	20,808	16	2	18	8	3	11
	35-60 ft	20,808	33	5	38	16	10	26
	> 60 ft	20,808	4	1	5	2	2	4
	Freezer	20,808						
			53	8	61	26	15	41
4E	<= 35 ft	89,279	42	0	42	21	0	21
	35-60 ft	89,279	8	0	8	4	0	4
	> 60 ft	89,279	2	0	2	1	0	1
	Unknown	89,279	1	0	1	1	0	1
			53	0	53	27	0	27
All Areas Total			4,802	585	5,387	2,400	197	2,597

TABLE 3.2-2. Modified Block Proposal: HALIBUT. Blocked and unblocked IFQ within vessel categories using 1991 TACs. Note that in some estimates of maximum consolidation, one IFQ block will combine with unblocked IFQ.

Area	Vessel Length Class	Ownership Constraint (lbs. IFQ)	Initial Blocked IFQs	Initial Unblocked IFQs	Total Initial IFQs	Consolidated Blocked IFQs	IFQ Block Combined With Unblocked IFQ	Consolidated Unblocked IFQ Plus One Block	Total Consolidated IFQs
2C	<= 35 ft	74,000	1,801,857	0	1,801,857	1,801,857	19,627	0	1,801,857
	35-60 ft	74,000	4,630,234	670,705	5,300,939	4,610,607	13,902	690,332	5,300,939
	> 60 ft	74,000	147,677	125,272	272,949	133,775	0	139,174	272,949
	Freezer	74,000	4,812	0	4,812	4,812	0	0	4,812
	Unknown	74,000	19,443	0	19,443	19,443	0	0	19,443
3A	<= 35 ft	214,702	6,604,022	795,978	7,400,000	6,570,494	33,528	829,506	7,400,000
	35-60 ft	214,702	2,436,567	186,115	2,622,682	2,417,248	19,319	205,434	2,622,682
	> 60 ft	214,702	6,256,147	9,661,865	15,918,012	6,236,170	19,977	9,681,842	15,918,012
	Freezer	214,702	853,568	7,072,831	7,926,399	841,465	12,103	7,084,934	7,926,399
	Unknown	214,702	24,116	103,408	127,524	9,265	14,851	118,259	127,524
3B	<= 35 ft	248,292	9,575,782	17,024,218	26,600,000	9,509,532	66,250	17,090,468	26,600,000
	35-60 ft	248,292	405,689	0	405,689	405,689	19,865	2,008,927	405,689
	> 60 ft	248,292	2,165,344	1,989,063	4,154,407	2,145,480	19,945	3,304,406	4,154,407
	Freezer	248,292	776,363	3,284,461	4,060,824	756,418	19,375	130,319	4,060,824
	Unknown	248,292	68,137	110,943	179,080	48,761	0	0	179,080
4A	<= 35 ft	19,154	3,415,533	5,384,467	8,800,000	3,356,348	59,185	5,443,652	8,800,000
	35-60 ft	19,154	145,255	0	145,255	145,255	17,356	0	145,255
	> 60 ft	19,154	617,467	77,745	695,212	600,111	15,574	95,101	695,212
	Freezer	19,154	560,002	271,508	831,510	544,429	0	287,082	831,510
	Unknown	19,154	28,022	0	28,022	28,022	0	0	28,022
4B	<= 35 ft	30,387	1,350,747	349,253	1,700,000	1,317,817	32,930	382,183	1,700,000
	35-60 ft	30,387	52,312	0	52,312	52,312	17,606	0	52,312
	> 60 ft	30,387	240,198	223,380	463,578	222,592	13,926	240,986	463,578
	Freezer	30,387	437,908	684,371	1,122,280	423,983	8,670	698,297	1,122,280
	Unknown	30,387	15,164	46,667	61,831	6,494	0	55,336	61,831
(con't)									
4B	<= 35 ft	30,387	745,582	954,418	1,700,000	705,381	40,201	994,619	1,700,000
	35-60 ft	30,387	52,312	0	52,312	52,312	17,606	0	52,312
	> 60 ft	30,387	240,198	223,380	463,578	222,592	13,926	240,986	463,578
	Freezer	30,387	437,908	684,371	1,122,280	423,983	8,670	698,297	1,122,280
	Unknown	30,387	15,164	46,667	61,831	6,494	0	55,336	61,831

(con't)

TABLE 3.2-2 (con't). Modified Block Proposal: HALIBUT. Blocked and unblocked IFQ within vessel categories using 1991 TACs. Note that in some estimates of maximum consolidation, one IFQ block will combine with unblocked IFQ.

Area	Vessel Length Class	Ownership Constraint (lbs. IFQ)	Initial Blocked IFQs	Initial Unblocked IFQs	Total Initial IFQs	Consolidated Blocked IFQs	IFQ Block Combined With Unblocked IFQ	Consolidated Unblocked IFQ Plus One Block	Total Consolidated IFQs
4C	<= 35 ft	23,673	127,969	55,657	183,626	114,883	13,086	68,743	183,626
	35-60 ft	23,673	122,242	87,589	209,831	116,137	6,104	93,694	209,831
	> 60 ft	23,673	81,232	117,537	198,769	81,232	.	117,537	198,769
	Freezer	23,673	7,774	0	7,774	7,774	.	0	7,774
			339,216	260,784	600,000	320,026	19,190	279,974	600,000
4D	<= 35 ft	20,808	81,993	58,073	140,067	77,850	4,143	62,217	140,067
	35-60 ft	20,808	201,467	189,792	391,260	184,823	16,644	206,437	391,260
	> 60 ft	20,808	46,916	21,758	68,674	30,398	16,518	38,276	68,674
	Freezer	20,808	.	.	.	.	.	.	.
			330,376	269,624	600,000	293,071	37,306	306,929	600,000
4E	<= 35 ft	89,279	64,022	0	64,022	64,022	.	0	64,022
	35-60 ft	89,279	29,081	0	29,081	29,081	.	0	29,081
	> 60 ft	89,279	6,756	0	6,756	6,756	.	0	6,756
	Unknown	89,279	140	0	140	140	.	0	140
			100,000	0	100,000	100,000	0	0	100,000
All Areas Total			22,461,258	25,038,741	47,500,000	22,172,669	288,589	25,327,331	47,500,000

3.3 Alternative 3: The Modified Block Proposal for the Sablefish Fishery

Alternative 3 is the Modified Block proposed amendment for sablefish which the Council adopted at its September 1993 meeting. This proposal maintains the three vessel categories in the current sablefish IFQ plan. These three categories are the freezer-longliner class, the less than or equal to 60 feet catcher vessel class, and the greater than sixty feet catcher vessel class. Permanent transfers across vessel categories are not allowed.

The Modified Block proposal will place initial allocations of QS worth less than 20,000 pounds of sablefish IFQ in the implementation year into blocks. QS that is in a block can only be permanently traded as a block.³²

Small blocks with QS worth less than 3,000 pounds of IFQ in the first-year can be combined as long as the resulting block is worth 3,000 pounds or less. This has been termed the "sweeping up" provision and is intended to turn all blocks into "fishable" amounts of QS. The same provision existed in the Sitka Block alternatives in Part I and the Full/Partial Block alternatives in Part II.³³

Initial allocations of QS worth 20,000 pounds or more of IFQ in the implementation year will remain "unblocked". Unblocked QS can be traded in any amounts in the same fashion as QS would be traded under the current plan.

The Modified Block proposal would add new ownership constraints to the current IFQ program. Persons can still hold QS up to the most restrictive ownership constraint in an area. However, persons who hold any unblocked QS in an area can only hold one block of QS for that area. Persons who hold no unblocked QS for an area can hold up to two blocks of QS for that area.³⁴

The Council developed the Modified Block proposal at its September 1993 meeting after reviewing Part I of this report on the Sitka Block proposal and Part II of this report on the Full/Partial Block proposal. The Council felt that the Modified Block proposal would achieve the objective of these earlier block proposals with fewer restrictions on the flexibility and economic efficiency of the IFQ program as a whole.

The Modified Block proposal seeks to guarantee that a number of small blocks will be available for new entrants, the small part-time fleet, and diversified operations which want to participate on a part-time basis. Most of these blocks are expected to be unattractive to more full-time operations, given their size and the constraints on holding QS in blocks.

Similarly, persons who want to participate in the sablefish fishery on a more full-time basis will be able to trade in unblocked QS in the same fashion that they would be able to trade QS under the current IFQ program. For full-time participants, the Modified Block alternative is intended to be more flexible and less restrictive than either the Sitka Block or Full/Partial Block alternatives.

³²As in the other block proposals, the IFQ issued to a block can be leased to the extent allowed under the Council's current plan.

³³Note that the sweep-up could occur over time, so that the rule should be written with care.

³⁴Again, with the exception of the "sweeping up" provision.

Table 3.3-1 provides estimates of maximum potential consolidation under the Modified Block proposal. Estimates of the minimum remaining number of sablefish QS holders should maximum potential consolidation occur are provided by area and vessel class with totals by area. The table also provides a breakdown of the minimum remaining number of QS holders in the "blocked" and "unblocked" categories.

Table 3.3-1 also provides estimates of the initial number of sablefish QS holders with a breakout into blocked and unblocked categories. Note that this "initial number" is not the number of QS holders at initial allocation but an estimate of the number of QS holders after the "sweeping-up" provision has been applied.³⁵ The sweeping-up provision was assumed to occur entirely among holders of blocked QS.

The estimate of maximum potential consolidation was made assuming that holders of unblocked sablefish QS would want to hold the maximum amount allowed for an area. For purposes of the estimate, the most binding QS constraint was utilized. In the table, it is translated into IFQ assuming 1991 TACs.

The minimum remaining number of unblocked sablefish QS holders was calculated by taking the total amount of unblocked QS and dividing by the most binding ownership constraint. Within an area and vessel class, this left most unblocked QS holders with the maximum amount of QS allowed under the most binding ownership constraint. One unblocked sablefish QS holder in each category (the remainder from the division) had less than the maximum QS allowed. This person was assigned a QS block from the category which would bring the person's total QS holdings as close as possible to the most binding ownership constraint without exceeding it.

The minimum number of sablefish QS block holders should maximum consolidation occur was then calculated by taking the remaining number of blocks in each category, dividing by two, and rounding up to the nearest whole number. This was done because under the proposal, a person who holds no unblocked QS can hold up to two blocks of QS for the area.

The results of these calculations also can be seen in Table 3.3-1. Over all areas, persons holding QS blocks initially (after sweep-up) are estimated to represent approximately 61% (999 out of 1,634) of all QS holders.³⁶ If maximum potential consolidation occurs the number of persons holding QS blocks would fall by a little over 50%, because a few blocks would go to unblocked QS holders. However, the percentage of all QS holders who hold blocks would increase in each category.

The estimated number of unblocked QS holders falls by a much larger percentage in each category and area. An individual can buy unblocked QS up to the most binding ownership constraint for an area. Thus the maximum potential consolidation of unblocked QS among full-time participants is much larger on a percentage basis than the maximum potential consolidation of blocked QS.

³⁵The minimum number of blocks and blockholders remaining after sweep-up was estimated by adding up blocks with QS worth less than 3,000 pounds of IFQ in the first year of the program (assuming 1991 TACs) and dividing by 3,000. This will likely overestimate the amount of consolidation which will occur with the sweep-up. Note also that the sweep-up will occur over time and that the rule will need to be written with care.

³⁶The reader should regard this as a rough approximation only. The totals in this table should be viewed with caution as they do not necessarily represent the number of "unique" persons after the "sweep-up." Recall that some persons will be initially allocated sablefish QS in multiple areas.

Under Alternative 3, the estimated minimum possible number of QS block holders is highest in the Southeast Outside regulatory districts at 243. This would also represent a rough estimate of the minimum number of QS holders across all areas should maximum potential consolidation occur.³⁷

A goal of the Modified Block proposed amendment is to reduce the consolidation of shares relative to the current plan. The results of this analysis suggest that maximum potential consolidation will be less under the modified block amendment than it will be under the status quo alternative. The reduction in total consolidation will chiefly be seen among holders of blocked QS.

It should be noted that maximum potential consolidation for sablefish under the modified block proposal tends to be somewhat greater than it would be under similar Sitka Block and Full/Partial Block alternatives which use the same vessel categories and the two block rule.³⁸ This is because both the Sitka Block and Full/Partial Block alternatives make it more difficult for a full-time operator to obtain enough QS to reach the ownership constraint. Nevertheless, maximum potential consolidation under this sablefish Modified Block alternative tends to be less than similar Sitka Block and Full/Partial Block alternatives with a three block per area rule.³⁹

Table 3.3-2 provides estimates of the amount of IFQ assigned to blocked QS and unblocked QS assuming 1991 TACs. The estimates of the "initial amounts" again represent estimates made after the "sweep-up" of very small blocks. The estimates of the amount of IFQ in each category should maximum potential consolidation occur were made using the same assumptions noted above.

Over all areas, the amount of IFQ generated by QS in blocks which will be used by part-time operators is estimated to drop only slightly with consolidation. Approximately 15.7% of the sablefish IFQ will be in blocks. The amount of QS in blocks will remain unchanged due to consolidation. However, a small amount of the blocked QS will be taken by full-time operations if maximum consolidation occurs. Assuming 1991 TACs and current estimates of the distribution of qualifying pounds, the amount of sablefish IFQ from QS blocks going to more full-time operations is estimated to be 322,379 pounds in Table 3.3-2.⁴⁰

³⁷It would appear to be very unlikely that the minimum number of QS holders would be this low over all areas.

³⁸See Sitka Block alternative 11S on page 88 of Part I and Full/Partial Block alternative 4 on page 178 of Part II.

³⁹See Sitka Block alternative 9S on page 84 of Part I and Full/Partial Block alternative 5 on page 181 of Part II. Note that this does not hold in all areas.

⁴⁰Again, note that Table 3.3-2 has been estimated using 1991 TACs. The amount of IFQ associated with blocked and unblocked QS will vary somewhat as TACS change.

TABLE 3.3-1.

Modified Block Proposal: SABLEFISH.

Estimated maximum consolidation of blocks by area and vessel category. The estimates of initial quota share holders include the consolidation provisions for blocks under 3,000 lbs. IFQ. Ownership constraints have been translated into IFQs using 1991 TACs.

Area	Vessel Length Class	Ownership Constraint (lbs. IFQ)	Initial QS Holders Blocked	Initial QS Holders Unblocked	Total Initial QS Holders	Estimated Minimum Block Holders	Estimated Minimum Unblocked QS Holders	Total Estimated Minimum QS Holders
Aleutians	<= 60 ft	534,753	31	12	43	15	2	17
	> 60 ft	534,753	27	22	49	13	3	16
	Freezer	534,753	12	17	29	6	6	12
Bering Sea	<= 60 ft	655,890	70	51	121	34	11	45
	> 60 ft	655,890	37	12	49	18	1	19
	Freezer	655,890	23	19	42	11	2	13
Central Gulf	<= 60 ft	522,853	14	13	27	7	2	9
	> 60 ft	522,853	74	44	118	36	5	41
	Freezer	522,853	168	113	281	84	16	100
Southeast Outside	<= 60 ft	103,684	46	20	66	23	14	37
	> 60 ft	103,684	6	0	6	3	5	8
	Freezer	103,684	5	0	5	3	0	3
Western Gulf	<= 60 ft	466,354	225	213	438	113	35	148
	> 60 ft	466,354	293	141	434	146	60	206
	Freezer	466,354	33	19	52	16	14	30
West Yakutat	<= 60 ft	499,555	7	0	7	2	1	3
	> 60 ft	499,555	338	161	499	168	75	243
	Freezer	499,555	51	20	71	25	3	28
All Areas Total	<= 60 ft	499,555	137	60	197	68	7	75
	> 60 ft	499,555	48	46	94	24	7	31
	Freezer	499,555	6	5	11	3	1	4
All Areas Total	<= 60 ft	499,555	3	0	3	2	0	2
	> 60 ft	499,555	194	111	305	97	15	112
	Freezer	499,555	194	111	305	97	15	112
All Areas Total			999	635	1,634	496	152	648

TABLE 3.3-2. Modified Block Proposal: SABLEFISH. Blocked and unblocked IFQ within vessel categories using 1991 TACs. Note that in some estimates of maximum consolidation, one IFQ block will combine with unblocked IFQ.

Area	Vessel Length Class	Ownership Constraint (lbs. IFQ)	Initial Blocked IFQs	Initial Unblocked IFQs	Total Initial IFQs	Consolidated Blocked IFQs	IFQ Block Combined With Unblocked IFQ	Consolidated Unblocked IFQ Plus One Block	Total Consolidated IFQs
Aleutians	<= 60 ft	534,753	212,964	601,591	814,556	192,969	19,996	621,587	814,556
	> 60 ft	534,753	243,917	1,422,386	1,666,303	224,979	18,938	1,441,323	1,666,303
	Freezer	534,753	105,909	2,704,295	2,810,204	89,088	16,821	2,721,116	2,810,204
Bering Sea	<= 60 ft	655,890	562,790	4,728,272	5,291,062	507,036	55,754	4,784,026	5,291,062
	> 60 ft	655,890	310,849	487,195	798,043	292,043	18,805	506,000	798,043
	Freezer	655,890	195,173	1,107,371	1,302,544	177,140	18,034	1,125,404	1,302,544
Central Gulf	<= 60 ft	522,853	128,175	1,188,390	1,316,565	109,194	18,982	1,207,371	1,316,565
	> 60 ft	522,853	634,197	2,782,955	3,417,152	578,377	55,820	2,838,775	3,417,152
	Freezer	522,853	1,190,881	7,937,354	9,128,235	1,170,973	19,908	7,957,261	9,128,235
Southeast Outside	<= 60 ft	103,684	289,927	1,359,070	1,648,997	270,504	19,423	1,378,492	1,648,997
	> 60 ft	103,684	25,375	75,000	100,375	17,350	8,025	83,025	100,375
	Freezer	103,684	29,409	0	29,409	29,409	0	0	29,409
Western Gulf	<= 60 ft	466,354	2,762,077	7,606,355	10,368,432	2,714,833	47,245	7,653,600	10,368,432
	> 60 ft	466,354	459,593	955,165	1,414,758	439,972	19,621	974,786	1,414,758
	Freezer	466,354	293,609	1,621,968	1,915,577	274,362	19,246	1,641,214	1,915,577
West Yakutat	<= 60 ft	499,555	903,335	4,255,319	5,158,654	846,875	56,460	4,311,779	5,158,654
	> 60 ft	499,555	943,900	3,461,663	4,405,563	924,455	19,445	3,481,107	4,405,563
	Freezer	499,555	48,413	3,302,447	3,772,600	451,127	19,026	3,321,472	3,772,600
All Areas Total	<= 60 ft	499,555	1,473,224	7,007,982	8,481,207	1,418,704	54,520	7,062,502	8,481,207
	> 60 ft	499,555	8,050,031	43,317,282	51,367,312	7,727,652	322,379	43,639,660	51,367,312
	Freezer	499,555	10,758	0	10,758	10,758	0	0	10,758

3.4 Reporting Costs

The Modified Block proposed amendment for halibut and sablefish would not change the initial distribution of QS or IFQ relative to the current plan (Alternative 1). The information which applicants will need to provide should not change under any of the alternatives. Thus reporting costs for the applicants during the initial allocation process should not change under any of the alternatives.

Placing QS with less than 20,000 pounds of IFQ in the implementation year into blocks, sweeping up procedures, and constraints on block holdings may alter the behavior and the holdings of some participants relative to the current plan. Nevertheless, any increased tracking requirements and costs that would result from a Modified Block amendment would largely fall upon the IFQ plan administrator.

3.5 Administrative, Enforcement and Information Costs

The Modified Block proposed amendment may complicate initial allocations under the IFQ plan to some extent. This is also true of the Sitka Block and Full/Partial Block alternatives discussed in Part I and Part II of this report.

For example, it is likely that the IFQ program may be implemented before all QS appeals can be resolved. To do this, IFQ allocations in the first year of the program may have to be based upon the amount of QS that has been issued at the time of implementation rather than the ultimate amount of QS which will be issued. If so, the amount of QS outstanding at that time and the prevailing TACs will be used to determine which QS allocations will be "blocked" and which QS allocations will remain unblocked. In subsequent years, more QS will be issued, and that will lessen the IFQ value of the blocks of QS which were issued in the first year.⁴¹

Some persons may have unresolved appeals on the implementation date. Such persons might qualify for an unblocked QS allocation if the appeals eventually are settled in their favor but will only qualify for a QS block based on the QS which they have been issued as of the implementation date. The administrator will have to develop a rule for handling such cases. One solution might be to prohibit the transfer of the QS holdings of such a person, until the exact amount of the person's initial allocation has finally been resolved.⁴²

The Modified Block proposed amendment might impact NMFS's administrative and enforcement costs relative to the current IFQ program. Nevertheless, the "net impact" on these costs is difficult to predict.

⁴¹Note that changes in TACs will also affect the IFQ value of blocks of QS.

⁴²Note that a similar problem already exists with the Council's current IFQ plan with respect to the calculation and awarding of the proper amount of CDQ compensation. While the formula for CDQ compensation has not been addressed in the final rule, it is likely that both the amount of QS and the relevant TACs will be needed to make these calculations accurately. All of the block proposals could complicate the CDQ compensation problem, particularly if the program is implemented before all QS appeals are resolved. See the Appendix for more discussion.

The need to monitor additional sets of constraints may increase such costs. Computer programs written to track and account for QS, IFQ, QS transfers, and IFQ transfers will have to be altered to accommodate these additional provisions and any other complexities created by the existence of both blocked and unblocked QS. Enforcement and administrative costs may also increase if more fishing operations remain in the fishery because of the amendment. However, other aspects of the proposed amendment may decrease costs.

For example, to the extent that it will be more difficult and costly in terms of time and money for fishermen dealing with "blocked QS" to find and purchase (or sell) a particular amount of QS, the volume of transfers of QS (in blocks) per person may be lower than under the current IFQ plan. This may be offset if more persons remain involved in the fishery because of the new constraints. However, if the total volume of transfers is reduced (and if NMFS's administrative costs increase with each transfer) then administrative costs associated with transfers may fall.

It is likely that any decrease in average QS transfers per person will be less under the Modified Block proposal than it would have been under either the Sitka Block or the Full/Partial Block alternatives. Unblocked QS under the Modified Block alternative should transfer at similar rates as QS under the current IFQ plan.

NMFS enforcement currently plans to sample only a portion of transfer transactions for violations of transfer restrictions under the IFQ plan. Dave Flannagan, Special Agent in Charge (NMFS Office of Enforcement), has indicated that a lower volume of transfers will not lower transfer enforcement costs, but will allow NMFS to examine a higher percentage of the transfers and thereby improve enforcement of sundry transfer restriction provisions.

The Modified Block proposed amendment may change administrative and enforcement costs or the administrative tasks involved relative to the current plan. Nevertheless, at this time, it is difficult to predict whether the net impact on administrative and enforcement costs will be positive or negative.

3.6 Economic Efficiency Implications of the Modified Block Proposed Amendment

A major objective of the current IFQ plan is to increase the net economic benefits which are derived from Alaska's halibut and sablefish fisheries. Estimates made in previous Council documents suggest that the net benefits resulting from the program should be large.⁴³

Nevertheless, the IFQ program clearly has multiple objectives. Provisions in the IFQ plan seek to find a balance between economic efficiency gains and preserving the composition and diversity of the current fishing fleet.

For example, the Council created catcher vessel size categories and a freezer-longliner vessel category and established rules that QS initially allocated to each vessel category cannot be permanently transferred to another class.⁴⁴ Thus QS initially allocated to small vessels will remain with small

⁴³See The Supplemental Analysis, Sections 2.2 through 2.2.31.

⁴⁴the Final Rule on the Council's IFQ program allows catcher vessel IFQ to be used on a freezer-longliner as long as no frozen product is onboard during the trip (see 50CFR Part 676.22, Section i(3) in the Federal Register, 58(215) 59375-59413). However, the Council has decided to entirely eliminate the provisions for the halibut fishery and refine the rule (make more restrictive) for the sablefish fishery (Jay Ginter, personal communication).

vessels. The program also established QS and IFQ ownership caps which may further limit the potential amount of consolidation that could occur.

Proponents of the Sitka Block and Full/Partial Block proposals (see Part I and Part II) were concerned that the current plan does not go far enough to preserve the present composition and diversity of the fleet. Both alternatives were trying to guarantee that a portion of the blocked QS would only be attractive to small part-time operations and diversified operations which wanted to participate on a part-time basis.

The Modified Block proposal attempts to achieve the major objective of the earlier two block proposals with less impact on the flexibility and economic efficiency of the IFQ program. The Modified Block proposed amendment would not alter the initial distribution of QS. However, the Modified Block proposed amendment may have implications for fleet consolidation, maintaining fleet diversity, and the net economic benefits which are produced by the IFQ program.

This section briefly discusses some ways that the Modified Block proposed amendment might alter net economic benefits relative to the current program. As an accurate estimate of the change in net benefits would be difficult to make, the focus herein is on a qualitative discussion of the "direction" of change rather than a quantitative estimate of the absolute amount of the change.

3.6.1 Increased Search and Transactions Costs

Under the current plan, persons may permanently sell any portion of their QS holdings. This "divisibility" of QS holdings should serve to reduce search (finding a willing buyer or seller with the desired amount of QS) and transactions (negotiating and completing a transfer) costs for fishermen seeking to buy or sell QS.

For a given area and vessel category, every QS is the same under the plan. A fisherman who wants to buy a certain amount of QS could buy a portion of the amount from any willing quota share holder. Likewise a fisherman who wants to sell a certain amount of QS could sell portions of the amount to many different buyers.

The divisibility of QS holdings and the homogeneity of a QS for an area and vessel category should serve to facilitate permanent transfers and reduce the costs of transfers to fishermen. The current IFQ plan serves that function.

In contrast, all of the block proposals will increase search and transactions costs to fishermen dealing with QS blocks relative to the current plan. QS holdings within a block will not be divisible and can only be permanently transferred as a "block". This is also true of the blocks created under the Modified Block proposal. Each block may be unique, as the amount of QS within a block will vary widely.

Under such conditions, a fisherman who wants to buy a certain amount of blocked QS must search for a willing seller with a block of approximately the right amount. In cases where the fisherman already holds the maximum number of blocks for an area, the fisherman will have to find a willing buyer who wants an amount of QS approximately equal to those contained in one of the fisherman's blocks and a willing seller who has a block of appropriate size so that the fisherman will have the desired amount of quota shares after all transactions are completed.

However, the existence of unblocked QS under the Modified Block proposal should make matters easier for part-time fishermen as well as full-time fishermen. If part-time fishermen cannot find blocked QS of the desired amount, they could always purchase unblocked QS of the desired amount as long as they comply with the block holding constraints for an area. This would not be possible under either the Sitka Block or Full/Partial Block alternatives.

This feature of the Modified Block proposal will be particularly important if part-time operations prove to be more efficient and profitable than imagined by block proponents. Under the Sitka Block and Full/Partial block alternatives it is possible that the price per pound of QS in small blocks or partial blocks could be higher than the price per pound of larger blocks or full blocks. This could occur if there is large demand for relatively small blocks relative to the supply of such blocks.

Under the Modified Block proposal, if the price per pound of QS proves to be higher in blocks of QS rather than unblocked QS, then small part-time operators can simply buy unblocked QS. If this occurs, the presence of the unblocked QS should reduce the variation in the price per pound of similar amounts of blocked and unblocked QS.⁴⁵ This option would not be available under the Sitka Block or Full/Partial Block alternatives.

The Modified Block proposed amendment would increase the search and transactions costs associated with transfers of (blocked QS holdings) relative to the Status Quo alternative, but not to the extent of the Sitka Block or Full/Partial Block alternatives. These costs will be absorbed by buyers and sellers of blocked QS who try to make exchanges to alter their holdings. While QS brokers and/or other intermediaries will likely develop to reduce these costs and facilitate transfers, the costs of transferring blocked QS will still be high relative to the current program where QS holdings are divisible.

While higher search and transactions costs associated with blocked QS transfers will serve to reduce the net benefits generated by the IFQ program, the actual magnitude of these costs and the reduction in net benefits are difficult to estimate. This loss in net benefits must be balanced against other potential gains in net benefits and the Council's distributional objectives for the IFQ program.

3.6.2 Net Economic Benefits Resulting From Consolidation

An important function of adequately specified use-privileges is to create incentives to use resources efficiently. It is hoped that the IFQ program will go a long way toward reducing the costs associated with the "race for the fish" and will create an environment whereby fishermen can find the most profitable means to harvest and market their IFQ.

Even without QS transferability, an IFQ program would be expected to provide fishermen with greater in-season flexibility with respect to the timing of their harvest and utilization of their IFQs. Transferable use-privileges and a free market create incentives for resources to flow to their highest-valued use. The IFQ program is intended to be an approach to fisheries management that can serve this economic efficiency objective.

As previously noted, the current program represents a mix of economic efficiency and distributional objectives. While the ability to permanently transfer QS exist under the program, there are

⁴⁵This possibility is discussed further below. If this occurs, the Council could consider dropping the block feature from the rule at a later date.

constraints on the amount of QS which can be held by a person.⁴⁶ There are also caps on the amount of QS which can be fished from a vessel and restrictions on transferring quota shares across vessel categories. This latter restriction effectively creates separate markets for QS for each vessel class in each area.

All of these restrictions were included in the current plan to constrain the amount of consolidation that can occur and to help preserve some of the fleet's current diversity. Nevertheless, previous Council analyses suggest that there may be a considerable consolidation of QS under an IFQ program with unrestricted transferability.⁴⁷ The maximum possible consolidation of quota shares under the current plan was reviewed in Section 3.1 above.

It is likely that the Modified Block proposal will increase the number of QS holders and vessels that will be involved in the taking of the TAC. Rough estimates of the maximum potential consolidation under Modified Block proposed amendments for halibut and sablefish alternatives were provided in Sections 3.2 and 3.3. To the extent that the new constraints under the Modified Block proposal would prevent some exchanges that would otherwise occur under the current plan, net economic benefits of the IFQ program will be reduced.

3.7 Discussion of Other Aspects of the Proposed Amendment

Proponents of the Sitka Block amendment made a number of predictions about the expected results should the amendment be adopted. As discussed in Part I of this report, several of the predictions were arguable.

One of these predictions was that small blocks would be unattractive to the full-time fleet and thus would be available and relatively inexpensive to small part-time operations, diversified operations, and new entrants. Some Council members may be making similar assumptions about blocks that would be created under the Modified Block proposed amendment.

Dr. Joe Terry, an economist with the NMFS's Alaska Fisheries Science Center, pointed out that this prediction is uncertain.⁴⁸ Dr. Terry noted that while the price of a small block will be less than the price of a large block, the price per pound of QS will not necessarily be less with small blocks.

Dr. Terry explained that the price per pound of particular block sizes will depend upon supply and demand. He further noted that if small blocks are in heavy demand by salmon trollers and other fixed-gear fishermen (so that they can market their bycatch of IFQ species) then the price per pound for small blocks might be higher than the price per pound of large blocks. If so, he saw no advantage of the Sitka Block proposal to a small boat fisherman.

As noted above, a similar possibility exists under the Modified Block proposal. However, if blocked QS does tend to be more expensive per pound than unblocked QS, then part-time operators could opt to purchase unblocked QS under the Modified Block proposal.

⁴⁶These constraints do not apply at initial allocation, but would apply on any subsequent transfers.

⁴⁷See Supplemental Analysis, Chapter 2.0.

⁴⁸See Joe Terry's memorandum to Jay Ginter (dated May 7, 1992) in Appendix B of Part I of this report. Dr. Terry's discussion covers economic efficiency, equity, and other distributional issues with the Sitka Block proposal.

3.8 Summary of Economic Impacts: Distribution of Costs and Benefits

The Modified Block proposed alternatives appear to reduce maximum potential consolidation relative to the current IFQ program. If actual consolidation under the alternatives is positively related to maximum potential consolidation, then it is likely there will be more fishing operations remaining under the Modified Block proposal than there would be under the current IFQ plan.

Supporters of the block proposals feel that consolidation of QS holdings to a relatively small number of full-time fishing operations would be likely under the current IFQ program. They also feel that such a change would be too drastic, if it occurred, and could have a negative impact on the social structure and economies of some Alaska coastal communities. Proponents see the block proposals as a more "conservative" initial approach to an IFQ program which would serve to contain potential social and economic dislocations.

*where is
the
analysis*

The cost of the "insurance" provided by the Modified Block proposed amendment may come in reduced net economic benefits to the nation. However, that reduction is likely to be less than that which would occur under the Sitka Block and Full/Partial Block alternatives. The Modified Block proposed amendment appears to achieve the distributional objective with less loss in flexibility and efficiency than the other block proposals.

It is likely that the transactions costs associated with QS (blocked) transfers would increase under the Modified Block proposed amendment. Persons who want to alter their blocked QS holdings in an area would have to find a block of appropriate size to purchase. They may also have to find a buyer for a block of a certain size which they need to sell to stay within the new constraint on block holdings. Thus, exchanging QS block holdings will be more difficult and costly than under the current plan. These increased transactions cost will also lower the net economic benefits generated by the IFQ program.

To the extent that the Modified Block proposed amendment would reduce consolidation in these fisheries, there will be more fishing operations to monitor than under the current program. This factor coupled with the additional constraints placed on the plan, would likely raise administration and enforcement costs.

Nevertheless, another aspect of the proposed amendment might lower some costs or release administrative and enforcement resources for other tasks. To the extent that the Modified Block proposal would reduce the volume of QS transfers and/or the number of transfer transactions per time period, administrative and enforcement costs could be reduced or resources could be redirected toward other tasks.

In summary, the Modified Block proposed amendment could change the current IFQ program in several ways. While precise forecasts of those changes are not possible, it is likely that the cost of this amendment to "insure" against overly disruptive socioeconomic changes will come in some reduction in the net economic benefits of the IFQ program. However, the Modified Block proposed amendment may also serve the Council's distributional objective of guaranteeing that a portion of the QS will be available to smaller part-time operations and diversified operations. If it proves to be unnecessary, the program can be modified at a later time.

Under E.O. 12866 the Modified Block proposed amendment must be analyzed as to whether it would be a "significant" action. As noted above, a "significant regulatory action" is defined as one likely to result in:

1. an annual effect on the economy of \$100 million or more;
2. an adverse effect in a material way on the economy, a sector of the economy, productivity, competition, jobs, the environment, public health, or safety, or State, local, or tribal governments or communities; or
3. a novel legal or policy issue.

The Supplemental Analysis indicated that the current IFQ plan would have an effect on costs, prices, competition, employment, investment, and productivity but that the plan was not expected to have an annual effect of over \$100 million. The Supplemental Analysis forecasted that the current IFQ program would produce a large increase in net economic benefits, but that predicted increase was also less than \$100 million per year.

An IFQ program with a Modified Block amendment should still produce substantial net economic benefits relative to an open access fishery. Even if QS transferability was entirely eliminated, the in-season efficiency benefits of eliminating the derby-style fishery would be substantial. Costs associated with the "race for the fish" would still be greatly reduced. Competition will produce more efficient results once harvest privileges to the fish have been better defined.

Eliminating the "race for the fish" is also expected to improve public health and safety in these fisheries as fishermen will no longer be forced to fish during brief openings in poor weather. This should be true under the Modified Block proposed amendment as it is true under the current IFQ program.

Under the Modified Block proposed amendment, a considerable voluntary consolidation of QS holdings will still be possible. The Modified Block amendment will also have effects on costs, prices, competition, employment, investment, and productivity. However, it is unlikely that the amendment would result in annual effects of over \$100 million relative to the current plan.

The Modified Block proposed amendment is not expected to have an adverse effect on State, local, tribal governments, or communities. To the extent that the Modified Block proposal insures that there will always be blocks available to new entrants, small part-time operations, and diversified operations fishing on a part-time basis, it may provide more safeguards against potentially disruptive socio-economic changes in Alaska's coastal communities than does the status quo alternative.

The Modified Block proposal should not have an adverse effect on the environment. As discussed in Chapter 2.0, the modified block proposed amendment is not expected to have significant impacts under NEPA.

Many aspects of the current plan are preserved and large gains in net benefits should be generated relative to an open access fishery. Therefore, the Modified Block proposed rules should not be considered "significant" under Executive Order 12866.

4.0 INITIAL REGULATORY FLEXIBILITY ANALYSIS

The objective of the Regulatory Flexibility Act is to require consideration of the capacity of those affected by regulations to bear the direct and indirect costs of regulation. If an action will have a significant impact on a substantial number of small entities an Initial Regulatory Flexibility Analysis (IRFA) must be prepared to identify the need for the action, alternatives, potential costs and benefits of the action, the distribution of these impacts, and a determination of net benefits.

NMFS has defined all fish-harvesting or hatchery businesses that are independently owned and operated, not dominant in their field of operation, with annual receipts not in excess of \$2,000,000 as small businesses. In addition, seafood processors with 500 employees or less, wholesale industry members with 100 employees or less, not-for-profit enterprises, and government jurisdictions with a population of 50,000 or less are considered small entities.

A "substantial number" of small entities would generally be 20% of the total universe of small entities affected by the regulation. A regulation would have a "significant impact" on these small entities if it resulted in a reduction in annual gross revenues by more than 5 percent, annual compliance costs that increased total costs of production by more than 5 percent, or compliance costs for small entities that are at least 10 percent higher than compliance costs as a percent of sales for large entities.

If an action is determined to affect a substantial number of small entities, the analysis must include:

- (1) description and estimate of the number of small entities and total number of entities in a particular affected sector, and total number of small entities affected; and
- (2) analysis of economic impact on small entities, including direct and indirect compliance costs, burden of completing paperwork or recordkeeping requirements, effect on the competitive position of small entities, effect on the small entity's cashflow and liquidity, and ability of small entities to remain in the market.

4.1 Economic Impact on Small Entities

The persons who will receive an initial allocation of QS under the IFQ program should be considered small entities under definitions in Chapter 4.0. Current estimates suggest that there are 5,484 persons eligible for halibut QS and 1,121 persons eligible for sablefish QS.

The Modified Block proposed amendment would not impact the initial distribution of QS relative to the current plan. Nevertheless, the additional constraints under the Modified Block alternatives are likely to change the opportunities for profitable consolidations of QS holdings for a substantial number of these persons, where "substantial" is defined in 4.0 above. In addition there are fish processing companies, support industries, and potential future entrants who may be directly or indirectly affected by a Modified Block proposed amendment.

The impacts of the Modified Block alternatives on maximum potential consolidation were shown and discussed in detail in Sections 3.0 through 3.8. If actual consolidation is positively related to maximum potential consolidation it is likely that there would be more operations remaining in the fishery under a Modified Block rule than under the Status Quo alternative. While this may increase the total cost of the harvest and reduce the net economic benefits of the IFQ program, it may also result in slightly higher levels of harvesting employment than under the current IFQ plan.

Some small entities will find it more difficult to adjust their blocked QS holdings for an area to achieve their desired level and some will not be able to achieve the same level of QS holdings that they would under the current IFQ plan. While the Modified Block amendment should not significantly alter paperwork and recordkeeping requirements, the effort and transactions costs involved in transferring blocked QS will likely be greater than under the current plan.

A Modified Block rule would guarantee the continued existence of blocks containing relatively small amounts of QS. While it is unclear that it will be difficult to profitably purchase small amounts of QS under the status quo, supporters of the block proposals want to guarantee that such blocks will always be available so that a diverse group of fishing operations can continue to participate in these fisheries.

Supporters of the block proposals think that QS will tend to be consolidated into a relatively small number of full-time operations under the current plan. They feel that the most profitable use of QS will be in full-time operations, and these operations will be the ones which will be willing to pay the most for QS.

Diverse operations (halibut or sablefish) fishing on a part-time basis, or small part-time and entry-level operations would be much less prevalent in these fisheries if they are correct. The Modified Block proposed amendment seeks to ensure that a diverse group of operations can continue to profitably participate in these fisheries.

5.0 SUMMARY AND CONCLUSIONS

The proposed Modified Block amendments for halibut and sablefish were developed and adopted by the Council at its September 1993 meeting. The Modified Block amendment represents a compromise between the status quo alternative and some of the Full/Partial Block alternatives discussed in Part II of this analysis.

Proponents of block proposals are concerned that the current IFQ plan for halibut and sablefish may result in a large consolidation of QS which could greatly reduce the current diversity of fishing operations in coastal communities. While small part-time operations could purchase any amount of QS under the current plan, proponents of the block proposals fear that the QS may be more valuable to larger, more full-time operations. Proponents of block proposals think that if the current diversity of fishing operations is not maintained, the IFQ program may prove to have disruptive social and economic effects on Alaskan coastal fishing communities.

The Modified Block proposed amendment seeks to achieve some of the benefits of the IFQ program, while further constraining the program, with the goal of maintaining a relatively diverse group of fishing operations. The Council developed the alternative at its September 1993 meeting, and felt that it would achieve the chief objective of both the Sitka Block proposal and the Full/Partial Block proposal with less loss in flexibility and efficiency.

The Modified Block alternatives were examined with respect to maximum potential consolidation. The additional constraints in the Modified Block alternatives appear to reduce the maximum potential consolidation of quota shares relative to the current IFQ plan. However, the reduction was not as great as under similar Sitka Block and Full/Partial Block alternatives with a two block rule.

Whether or not the Modified Block proposed alternative will produce less actual consolidation of QS than the current IFQ plan is unclear. Nevertheless, if actual consolidation is proportional to maximum potential consolidation (as estimated herein), the Modified Block alternatives should result in a larger remaining number of fishing operations than will the current plan.

The Modified Block proposed amendments would impact the net economic benefits generated by the current IFQ program. To the extent that some profitable opportunities for consolidation of quota shares may be lost, the net economic benefits generated by the program may be reduced. The proposed amendment will increase the search and transactions costs of persons who want to purchase or sell additional blocks of QS. Each block is unique and therefore it will be harder to find willing buyers or sellers of blocks with the exact amount of QS desired. Because of the two block limit on the blocks a "block-only" person may hold in an area, some persons may have to both buy and sell blocks of appropriate sizes in order to reach the new level of quota shares they want. This increase in fishermen's search and transactions costs will reduce the net economic benefits generated by the IFQ program. However, the presence of tradeable unblocked QS should help to mitigate this problem.

The Modified Block proposed amendment may have impacts on administrative and enforcement costs as well as the tasks that will need to be performed to manage IFQs. If more vessels remain in the fishery due to the amendment, the IFQ program may be more difficult to monitor and enforce. The need to monitor additional sets of constraints may also increase these costs. However, to the extent that the blocks reduce the number of transfers, resources may be released to perform other tasks.

6.0 REFERENCES

Supplemental Analysis of the Individual Fishing Quota Management Alternative for Fixed Gear Sablefish and Halibut Fisheries. Gulf of Alaska and Bering Sea / Aleutian Islands. March 27, 1992. This report is called the Supplemental Analysis herein.

Discussion Draft Analyses of "The 1,000 Pound Minimum IFQ" Proposed Amendment to the Individual Fishing Quota Management Alternative for Alaska's Fixed Gear Halibut Fishery. October, 1992.

Revised Supplement to the Draft Supplemental Environmental Impact Statement and Regulatory Impact Review / Initial Regulatory Flexibility Analysis to the Groundfish Fishery Management Plans for the Gulf of Alaska and the Bering Sea / Aleutian Islands. Longline and Pot Gear Sablefish Management. May 13, 1991

Draft for Public Review, Environmental Impact Statement / Regulatory Impact Review / Initial Regulatory Flexibility Analysis for Proposed Individual Fishing Quota Management Alternatives for the Halibut Fisheries in the Gulf of Alaska and Bering Sea / Aleutian Islands. July 19, 1991

Federal Register. 58(215):59375-59413. November 9, 1993

Dalheim, M.E. 1988. Killer Whale (Orcinus orca) Depredation on Longline Catches of Sablefish (Anoplopoma fimbria) in Alaska Waters. U.S. Dept. Comm., NOAA/NMFS, NWAFC Processed Report 88-14.



7.0 AGENCIES AND INDIVIDUALS CONSULTED

Earl Krygier, Dave Benton, Dave Ackley
Alaska Department of Fish and Game
P.O. Box 25526
Juneau, AK 99802-5526

Joe Terry, Dave Colpo
Alaska Fisheries Science Center
National Marine Fisheries Service
7600 Sand Point Way N.E., Building 4
Seattle, WA 98115-0070

Jay Ginter, Sue Salveson; Fisheries Management Division
Tamra L. Faris, Steven Zimmerman; Protected Resources Management Division
National Marine Fisheries Service
P.O. Box 21668
Juneau, AK 99802-1668

Marilyn Dalheim
Marine Mammal Laboratory
National Marine Fisheries Service
7600 Sand Point Way N.E., Building 4
Seattle, WA 98115

Marcus Hartley, Chris Oliver
North Pacific Fishery Management Council
P.O. Box 103136
Anchorage, AK 99510

David Flannagan
Office of Enforcement
National Marine Fisheries Service
P.O. Box 21668
Juneau, AK 99802-1168

Linda Behnken, Dan Falvey
Alaska Longline Fishermen's Association
P.O. Box 1229
Sitka, AK 99835

Ron Hegge
14235 Hancock Drive
Anchorage, AK 99515-3961

Bruce Turris
Halibut and Sablefish Coordination
Government of Canada
Department of Fisheries and Oceans
Economics and Statistics Branch
1090 West Pender Street
Vancouver, BC VGE ZP1

8.0 LIST OF PREPARERS

Kurt Schelle, Kurt Iverson, and Ben Muse
Alaska Commercial Fisheries Entry Commission
8800 Glacier Highway, #109
Juneau, Alaska 99801

Sally Bibb
National Marine Fisheries Service
P.O. Box 21668
Juneau, Alaska 99802-1668

Portions of this document are borrowed from previous analysis documents which relied heavily on contributions from other authors.

Data bases used in this analysis were supplied by:

National Marine Fisheries Service
Alaska Fisheries Science Center
7600 Sand Point Way N.E., Building 4
Seattle, Washington 98115



APPENDIX

**THE MODIFIED BLOCK PROPOSED AMENDMENT
ANCILLARY ISSUES AND RULE-MAKING OPTIONS**

March 14, 1994



APPENDIX

THE MODIFIED BLOCK PROPOSED AMENDMENT

ANCILLARY ISSUES AND RULE-MAKING OPTIONS

Part III of this report contains an EA/RIR/IRFA on the Modified Block proposed amendment. The Council developed this amendment at its September 1993 meeting.

Part III of this report notes that the Modified Block proposed amendment may result in some additional complications for the IFQ program. The issues which were identified might be addressed and allayed in the rule-making for the proposed amendment. These issues fall into two categories:

1. Potential complications due to interactions with the Community Development Quota (CDQ) and CDQ compensation portion of the IFQ program, and
2. Potential complications if some blocks are created which would be non-transferable because of other provisions in the current final rule for the IFQ programs.¹

This appendix briefly outlines these potential complications, provides some alternatives for treating each issue, and discusses the tradeoffs associated with the alternative treatments.

Interactions With The CDQ Compensation Portion Of The IFQ Plan

As noted in this report, an explicit formulation of the CDQ compensation methodology has not been included in the rule-making process to this point. Nevertheless, both the preamble to the final rule and the final rule itself provide some general guidance on the mechanics of CDQ compensation.

These documents indicate in general terms that persons who take reductions in sablefish IFQs in the Bering Sea-Aleutian Islands area due to CDQ allocations will be compensated with sablefish QS allocations in each of the non-CDQ GOA areas. Similarly, persons who take reductions in halibut IFQ in IPHC areas 4B through 4E will be compensated with halibut QS in non-CDQ Alaska IPHC areas. It is also clear that the Council intends CDQ compensation to occur on a one-time basis prior to implementation of the program.²

Earlier Council documents suggest that the Council intended all persons who receive initial allocations to share equally the burden of the CDQ allocations. Staff have understood this to mean that every person who receives an initial allocation of QS will take the same percentage reduction

¹See Federal Register. 58(215):59375-59413. November 9, 1993.

²This EA/RIR/IRFA notes that it is likely that some QS/qualifying pound appeals will not be resolved by the implementation year. If CDQ compensation were to be precisely determined, implementation would have to wait until all such appeals were resolved. The preamble to the current final rule and the final rule suggest that CDQ compensation will be calculated on a one-time basis prior to implementation, and that the calculation will be based entirely upon the claims for QS/qualifying pounds which have been resolved at that time. Under this rule, the resolution of QS appeals after the implementation date will not result in further CDQ compensation adjustments.

in IFQ, where that percentage reduction is measured relative to a "TAC" in an appropriate base year.³ This principle will hold in both the sablefish and halibut fisheries.

While a precise description of the CDQ compensation procedures has yet to be formalized, staff currently understand that those receiving CDQ compensation will receive small amounts of compensatory QS in each non-CDQ area. These amounts will usually be relatively small.

Moreover, many persons who receive compensation in non-CDQ areas may have no other QS holdings in those areas and may have no desire to fish in those areas. For such persons, the "compensation" which they receive through this process will come only through the sale of the compensatory QS which they receive.

Under the current IFQ plan, the compensatory QS issued to such persons will be "unblocked" as will all QS allocations. Under the Modified Block proposal, these allocations of compensatory QS within a non-CDQ area usually will be worth less than 20,000 pounds of QS in the implementation year and will therefore be placed into a block.⁴

As noted in Part III of this report, the search and transactions cost required to transfer a block of QS may tend to be higher than the search and transactions costs associated with the transfer of a similar amount of unblocked QS. Hence, if compensatory QS is issued in blocks the "effective compensation" may be less than if the compensatory QS is left unblocked.

Placing the QS that is allocated as CDQ compensation into blocks may not have been the anticipated by the Council when they developed the Modified Block proposal. Several different alternatives for treating compensatory QS could be chosen in the rule-making for the Modified Block proposal. Among the possibilities are the following:

1. **Issue All Compensatory QS In An Area In Blocks If It Is Worth Less Than 20,000 Pounds Of IFQ In The Implementation Year, Otherwise Leave It Unblocked.**

Discussion:

It is likely that almost all of the compensatory QS would go into blocks under this alternative. For persons with no other QS in an area, blocked compensatory QS may result in smaller "effective compensation" than would unblocked QS. This is because the search and transactions costs associated with transferring blocks are expected to be higher than the costs associated with transferring a similar amount of unblocked QS.

³ As of this writing, the base year(s) TACs to be used for CDQ compensation are still undecided. Note that CDQ compensation procedures could be developed to achieve an equal percentage IFQ tax either by reducing the QS holdings of persons with qualifying pounds in a non-CDQ area by the amount of compensatory QS needed or through the allocation of an appropriate amount of additional QS which would reduce the "IFQ value" of a single quota share.

⁴ Note that this could occur under the Sitka Block and the Full/Partial Block proposals also. However, in some cases the person may have enough QS in the area to receive unblocked QS in the absence of compensatory QS. For example, if someone already has QS worth more than 20,000 pounds of IFQ in an area then the addition of compensatory QS might be added to that total as additional unblocked QS. This option is briefly discussed herein.

Persons who receive compensatory QS who already have QS in the area, would either receive two blocks of QS or a single block of compensatory QS and unblocked QS based upon their qualifying pounds in the area. If a person receives two blocks, that person would be confined by the new block ownership constraint under the Modified Block proposal. In order to expand their holdings they would have to first transfer away a portion of their holdings.

Persons who receive compensatory QS who already hold QS in an area might prefer to have their QS holdings added together prior to determining if the total should be blocked or left unblocked. (See alternatives 3 and 4 below)

2. Issue All Compensatory QS In An Area As Unblocked QS.

Discussion:

For persons with no other QS holdings in the area, this option may make the compensatory QS more tradeable and hence more valuable than would the first option above. The compensatory QS might be more valuable since the search and transactions costs associated with selling unblocked QS may tend to be lower than the costs associated with selling a similar amount of blocked QS.

However, some persons who already have QS in an area might want the compensatory QS included with their other holdings. For example, some persons who would receive a small block of QS and some additional compensatory unblocked QS under this option might prefer to have their QS holdings combined into a larger block of QS for that area.

3. Issue Compensatory QS As A Block Or Leave It Unblocked Depending Upon The Person's Total QS Holdings In The Area.

Discussion:

This is the Council's preferred alternative. Under this option, a person's compensatory QS in an area would be added to the person's other QS holdings in the area. If the person's total QS holdings in the area (including the compensatory QS) were worth less than 20,000 pounds of IFQ in the implementation year, the QS would be issued as a block. If the person's total QS holdings in the area were worth at least 20,000 pounds of IFQ in the implementation year, then the person would receive unblocked QS.⁵

It is likely that a large portion of the compensatory QS will be in blocks as it will go to persons without other QS holdings in an area. The "compensation" provided to such persons may be less valuable than if it were left unblocked as under alternative 2 because the transactions costs associated with selling it may tend to be higher. However, such persons would be better off than if they received their QS in two blocks as they would under alternative 1 above.

⁵Another complication due to the Modified Block proposed amendment was noted in Part III. Persons with unresolved appeals at the time of implementation may have confirmed QS that is worth less than 20,000 pounds of IFQ. If the appeals would be eventually resolved in their favor, they might have enough additional QS to qualify for either unblocked QS or a larger block of QS. This complexity will also have to be handled carefully by the administrator.

4. **Let Persons Who Receive Compensatory QS In An Area Decide If That QS Should Be Blocked Or Unblocked, And Whether Or Not That QS Should Be Combined With Their Other QS Holdings In The Area.**

Discussion:

This option would give the person receiving the CDQ compensation the flexibility to decide the type of compensatory QS allocation which would be most valuable from their perspective. However, it would also require additional interactions between the plan administrator and the applicant to explain options and reach decisions. This could increase administrative costs and/or increase the resources required to complete the allocation in a timely manner relative to the other options.

Note that the percentage of QS in blocks in non-CDQ areas might increase due to CDQ compensation because of the relative reduction in the "IFQ value" of the QS held by persons in these areas. Some of the persons whose QS holdings would have been equivalent to more than 20,000 pounds of IFQ in the absence of CDQ compensation may have their holdings reduced to the point where their QS will be placed into a block.

Placing the QS which is issued as CDQ compensation into blocks would also increase the percentage of QS in blocks in non-CDQ areas. This effect of CDQ compensation will be offset to the extent that compensatory QS is left unblocked and/or combined with a person's other CDQ holdings in an area.

Potential Complications If Non-transferable Blocks Are Created

A second complication of the Modified Block proposal is that it is possible that some non-transferable blocks may be created. The EA/RIR/IRFA on the proposal indicated that the Modified Block amendment might result in some non-transferable blocks in the halibut Bering Sea areas when coupled with other provisions in the current final rule for the IFQ program. This would occur if blocks are created which contain QS in excess of the ownership cap. With CDQ allocations, it is possible that such blocks could be created in IPHC halibut areas 4A through 4E.⁶

Under the Modified Block proposal, persons with QS in an area worth less than 20,000 pounds of IFQ in the implementation year are to receive their QS in a block. Depending upon the actual distribution of QS and available TACs in the implementation year, it is possible that some of these

⁶Note again that CDQ allocations and compensation were not considered in the analysis since the rule for CDQ compensation has not been formalized as of this writing. CDQ allocations will reduce the remaining TAC in an area and reduce the "IFQ value" of QS holdings in the area. This will increase the percentage of QS holdings which are blocked in an area since a greater percentage of the total QS holdings will be worth less than 20,000 pounds of IFQ in the first year of the program.

For example, in IPHC Area 4E, 100% of the TAC might be allocated as CDQs during the first year of the program and then there would be no remaining TAC to distribute to QS holders. Thus all QS holdings in the area will be worth zero IFQ in the area and all QS holdings would be "blocked" under the Modified Block proposed amendment.

"blocks" may exceed one of the QS ownership caps specified in the final rule even though they are worth less than 20,000 pounds of IFQ.⁷

For example in Area 4A the aggregation limit (assuming the 1991 TAC) is 19,154 pounds of IFQs. The maximum block size is 20,000 pounds of IFQs. A person receiving QS equivalent to more than 19,154 pounds of IFQs but less than 20,000 would receive the QS in a block that could not be sold.

With the exception of the "sweeping up" provision noted in Part III, blocks must be traded in their entirety under the Modified Block proposed amendment; i.e., a fraction of the QS in a block cannot be sold separately. However, if a block would hold QS in excess of an ownership cap it could not be traded under the current final rule, because nobody can receive QS through transfer in amounts which would exceed an ownership cap.⁸

The actual number of non-transferable blocks would depend upon the prevailing halibut TACs and the amount of quota shares outstanding when the program is implemented. Table A provides estimates of the number of non-transferable blocks which potentially could be created in these areas using current estimates of qualifying pounds and different assumptions about prevailing TACs in the implementation year.

Table A provides estimates under 7 different TAC scenarios. These scenarios represent the halibut TACs which prevailed during recent seasons over the 1988 through 1994 time period. As can be seen, in the absence of CDQ allocations non-transferable blocks would be created under two of the scenarios only.

These are the two years (1990 and 1991) in which the overall TACs in areas 4A through 4E are low relative to the other five years. An amount of QS equal to the QS ownership constraint translates into a lower amount of IFQ when TACs are low and a higher amount of IFQ when TACs are high. This can also be seen in Table A.

CDQ allocations decrease the amount of TAC available to allocate as IFQs. Thus an amount of QS will translate into less IFQ with CDQ allocations than it would in the absence of CDQ allocations. CDQ allocations increase the estimated number of non-transferable blocks that will be created. With CDQ allocations, some non-transferable blocks would be created under all seven TAC scenarios. This can also be seen in Table A.

Even if some non-transferable blocks are created, the "problem" may tend to be reduced over time as quota share appeals are resolved. This is because the "blocking" that will occur in the implementation year will be based upon the relevant TACs (or "remaining" TACs) and the quota shares which have been confirmed at that time.

However, a block which exceeds an ownership constraint in the first year of the program, may not exceed the ownership constraint in subsequent years. This is because more quota shares will be issued whenever appeals are resolved in favor of applicants. As a result, the percentage of total

⁷The terms "ownership cap" or "ownership caps" as used herein refer to the QS use limits specified in the final rule. See Federal Register. 58(215):59375-59413. November 9, 1993.

⁸See 50 CFR Section 626.21, subpart (e)(1)(iii) and Section 676.22 in the Federal Register. (58 (215):59408 -59409. November 9, 1993.

quota shares that are contained in any particular block may fall in subsequent years. This may be offset to some extent by enforcement actions which reduce the number of quota shares outstanding.⁹

Nevertheless, the possibility exists that some blocks may be created under the Modified Block proposal which would be non-transferable.¹⁰ This will occur if the block contains QS that is in excess of the ownership cap but is also worth less than 20,000 pounds of IFQ in the implementation year and if subsequent additions to the QS total are inadequate to push the block below the cap.

Nontransferable blocks, should they occur, could raise equity issues and may invite litigation. Preventing a recipient from liquidating a QS block whose size violates QS use limits may be viewed as inequitable because all other QS holders would be permitted to liquidate their fishing harvest interest, including QS holders who are initially issued unblocked QS that exceeds the QS use limits.¹¹

⁹If there are many enforcement actions which reduce the number of quota shares outstanding, it might be possible for a block which did not exceed a QS ownership cap in the implementation year to exceed an ownership cap in subsequent years.

¹⁰It is possible that such blocks could be transferred by operation of law.

¹¹Unlike QS blocks, which could not be divided, unblocked QS can be divided. By selling off portions of their holdings to different persons, holders of unblocked QS would be able to conform with QS use limits when transferring. QS use limits restrictions in the "Final rule" can be found at 50 CFR 676.22 (e), (f), and (g).

Table A
Numbers of non-transferable blocks with and without CDQs

	1988	1989	1990	1991	1992	1993	1994
Total Allowable Catches (in pounds)							
4A	1,900,000	1,800,000	1,500,000	1,700,000	2,300,000	2,020,000	1,800,000
4B	2,000,000	1,900,000	1,500,000	1,700,000	2,300,000	2,300,000	2,100,000
4C	700,000	600,000	500,000	600,000	800,000	800,000	700,000
4D	700,000	600,000	500,000	600,000	800,000	800,000	700,000
4E	100,000	100,000	100,000	100,000	130,000	120,000	100,000
Numbers of non-transferable blocks in the absence of CDQs							
4A	0	0	6	1	0	0	0
4B	0	0	0	0	0	0	0
4C	0	0	0	0	0	0	0
4D	0	0	1	0	0	0	0
4E	0	0	0	0	0	0	0
Numbers of non-transferable blocks in the presence of CDQs							
4A	0	0	6	1	0	0	0
4B	0	0	0	0	0	0	0
4C	5	5	6	5	4	4	5
4D	2	3	4	3	0	0	2
4E	0	0	0	0	0	0	0
IFQ Pounds corresponding to QS limit (147,682.47) in the absence of CDQs							
4A	21,408	20,281	16,901	19,154	25,915	22,760	20,281
4B	35,749	33,962	26,812	30,387	41,111	41,111	37,536
4C	27,618	23,673	19,727	23,673	31,563	31,563	27,618
4D	24,276	20,808	17,340	20,808	27,744	27,744	24,276
4E	89,279	89,279	89,279	89,279	116,063	107,135	89,279
IFQ Pounds corresponding to QS limit (147,682.47) in the presence of CDQs							
4A	21,408	20,281	16,901	19,154	25,915	22,760	20,281
4B	28,599	27,169	21,449	24,309	32,889	32,889	30,029
4C	13,809	11,836	9,864	11,836	15,782	15,782	13,809
4D	16,993	14,566	12,138	14,566	19,421	19,421	16,993
4E	0	0	0	0	0	0	0

Administrative Options

Because of the potential for non-transferable blocks, it may be desirable to adjust the Modified Block proposed amendment. Several different alternatives for treating such blocks could be chosen in the rule-making for the Modified Block amendment. The following provides a brief list of possible alternative regulatory approaches for handling this issue should it occur.

1. Current Formulation:

Discussion:

Under the current formulation, any blocks created which permanently exceed a QS ownership cap would be non-transferable. Portions of the QS in the block could not be sold separately under the Modified Block proposed amendment and nobody could receive QS in excess of the ownership cap through transfer under the current plan.¹² Non-transferable blocks may raise an equity issue with respect to treating persons who fall into this category differently than others.

For example, persons who are initially allocated unblocked QS which exceeds the ownership cap will be able to sell off portions of their holdings to multiple persons and thereby obtain fair market value for their holdings. Similarly, persons who receive blocks of QS worth less than the ownership cap will be able to sell or trade them for their benefit. Only persons who initially receive blocked QS that is permanently worth more than the ownership cap would be stuck with nontransferable QS.

However, as noted above, if blocks are created in the first-year which exceed the most restrictive QS ownership cap based upon the QS outstanding at that time, such blocks may eventually hold QS below the ownership cap if the total QS outstanding grows in subsequent years as appeals are resolved. Under the current formulation, the Council could wait to see whether or not a problem actually exists and then correct it with additional rule-making if it does.

2. Place A Person's QS Up To The Ownership Cap Into A Block, Allocate Any Additional QS To The Person As Unblocked QS.

Discussion:

Under this alternative, if the most restrictive QS ownership cap in an area is worth less than 20,000 pounds of IFQ in the implementation year then the maximum size block for that area would be set equal to the ownership cap.

Persons with QS holdings worth 20,000 pounds or more of IFQ in the implementation year would be issued unblocked QS. Persons with QS holdings less than or equal to the ownership cap in an area would be issued a single block containing that QS.

Persons with QS holdings greater than the most restrictive QS ownership cap for the area but worth less than 20,000 pounds of IFQ would be issued both blocked and unblocked QS. Such persons would be issued one block containing an amount of their QS equal to the area's most restrictive ownership cap. The remainder of their QS would be issued as unblocked QS.

¹²Again, a transfer of such blocks might occur by operation of law.

This alternative would guarantee that there would be no non-transferable blocks at the time of implementation. However, while most persons would receive either a block of QS or unblocked QS, persons falling into this "special" category would receive both a block of QS and unblocked QS.

3. Issue One Block To The Person With QS Equal To The Ownership Cap, And Issue The Person's Remaining QS In Another Block.

Discussion:

This alternative would simply split a person's holdings into two blocks in cases where the person's initial QS allocation in an area was worth more than a QS ownership cap but less than 20,000 pounds of IFQ in the implementation year. One of the blocks would contain QS equal to the ownership constraint. The second block would contain the person's remaining QS.

This alternative would also guarantee that no non-transferable blocks would be created at the time of implementation. It would also mean that all initial QS allocations worth less than 20,000 pounds of IFQ would be in blocks. However, persons who fall into this category would receive two blocks rather than one.

4. Issue Blocks To Persons With QS Holdings That Are Less Than Or Equal To The Ownership Cap, Issue Unblocked QS To All Others.

Discussion:

This alternative would also guarantee that there would be no non-transferable blocks. Under this alternative, if the most restrictive QS ownership cap for an area is worth less than 20,000 pounds of IFQ in the implementation year, a person's initial allocation of QS will be placed into a block only if the QS allocation is less than or equal to the ownership cap. If a person's initial allocation of QS exceeds the ownership cap, then the person will be issued unblocked QS.

This option would mean that all persons would be issued either blocked or unblocked QS.¹³ However, this option could result in different blocking rules by area. In some areas, QS would be blocked if it were worth less than 20,000 pounds of IFQ in the implementation year. In other areas, a QS allocation might be left unblocked when it is worth less than 20,000 pounds of IFQ in the implementation year, if that QS allocation also exceeds an ownership cap.

5. Exempt IPHC Areas 4A Through 4E From The Modified Block Plan.

Discussion:

Under this alternative, all QS in IPHC areas 4A through 4E would be issued as unblocked QS. This option also would eliminate the possibility that some nontransferable blocks might be created.

¹³ Again, this abstracts from CDQ compensation blocking considerations. Under some of the CDQ compensation blocking alternatives noted above, some persons might still receive both blocked and unblocked QS in a non-CDQ area.

This option would mean that persons in different areas would face different blocking rules. Some persons with QS worth less than 20,000 pounds of IFQ in the implementation year will be issued blocks in IPHC areas 2C through 3B. In Areas 4A through 4E, persons with holdings worth similar amounts of IFQ will receive unblocked QS.

6. Allow All Blocks To Be Traded.

Discussion:

Under this alternative, the rule for the IFQ plan would be changed so that any blocks that might be created which are greater than the QS ownership cap for an area would be tradeable. While this would make all blocks tradeable, it might not achieve the Council's long-term goal of eventually reaching the point where no person has QS holdings in excess of an ownership cap.

The current IFQ plan allows initial QS allocations in excess of the ownership caps. However, nobody can receive QS in excess of an ownership cap through transfer. This rule is designed to achieve the objective noted above. Creating a block with QS in excess of an ownership cap and making it tradeable could mean that QS holdings in excess of an ownership cap will continue to exist through time.

7. Issue Such Blocks But Allow Them To Be Split For Transfer Purposes If They Still Exceed The QS Constraint At The Time Of Transfer.

Discussion:

This is the Council's preferred alternative. Under this alternative, all QS worth less than 20,000 pounds of IFQ at initial issuance would be placed into blocks, even if some of the blocks would exceed a QS ownership cap at the time they were created. The plan administrator would be concerned with the magnitude of the QS in a block only at the time of transfer.¹⁴

The plan administrator would enforce this alternative when processing transfer requests. If a block exceeds a QS ownership cap when the holder wants to transfer it, the administrator would split the block into two blocks. One block would contain QS equal to the relevant cap and the second block would contain the remainder of the person's QS holdings. The holder would be required to transfer the two blocks to different persons.

As the total amount of QS may be changing annually due to resolution of appeals and/or enforcement actions, the amount of QS in a block could be above a QS cap in some years and below it in others. Blocks which exceeded a QS ownership cap at the time of initial issuance might not exceed a cap at the time of transfer, and vice versa.

Under this alternative, the size of a block would only become an issue at the time the holder wants to transfer the block. Blocks which contain QS in excess of an ownership cap would be split at the time of transfer.

¹⁴This alternative was suggested by Marcus Hartley, the chief staff economist for the Council.

Summary

This appendix has briefly discussed two types of complications which may arise under the Modified Block Proposed amendment and has offered some alternatives for treating those complications. These potential complications involve the interaction of the Modified Block proposed amendment with the CDQ compensation portion of the IFQ plan and the possibility that some blocks may be created which exceed a QS ownership cap in some Bering Sea halibut areas.

Rule-making alternatives for these two types of complications may also interact with each other. All of these potential complications might be addressed directly in the rule-making for the Modified Block proposed amendment, if the complications are perceived as issues which need to be addressed prior to the first year of the program.



DRAFT FOR SECRETARIAL REVIEW

ADDENDUM

TO

ENVIRONMENTAL ASSESSMENT/REGULATORY IMPACT REVIEW/

INITIAL REGULATORY FLEXIBILITY ANALYSIS

OF

ALTERNATIVES TO

ALLOCATE THE PACIFIC COD TOTAL ALLOWABLE CATCH BY GEAR

AND/OR

DIRECTLY CHANGE THE SEASONALITY OF THE COD FISHERIES

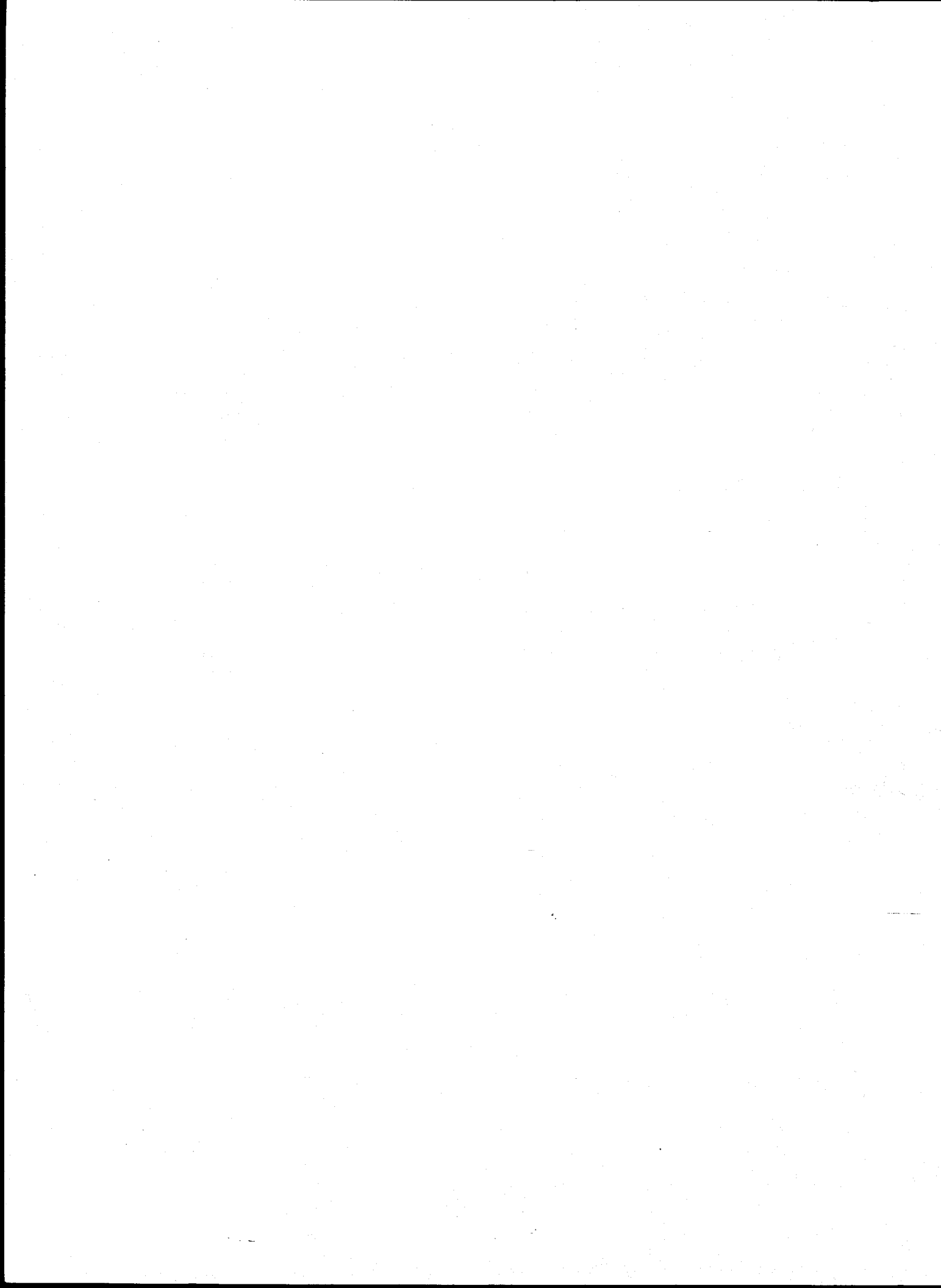
AMENDMENT 24

TO THE FISHERY MANAGEMENT PLAN FOR THE

GROUND FISH FISHERY OF THE BERING SEA AND ALEUTIAN ISLANDS AREA

Prepared by :
National Marine Fisheries Service,
Seattle, Washington

October 5, 1993



1.0 INTRODUCTION

A Council review draft EA/RIR/IRFA for BSAI Amendment 24 was prepared by a staff analytical team in response to the direction provided by the Council in September. It provided an evaluation of the efficacy and the potential biological and socioeconomic impacts of establishing a fixed allocation of the Pacific cod TAC by gear and/or explicitly changing the seasonality of the cod fisheries. After reviewing that draft in April, the Council: (1) developed a problem statement for Amendment 24; (2) stated that unless it is presented with substantial consensus among major industry components, it would be unlikely to take any action on this amendment; and (3) voted to have the draft released for public review after it is modified both to address jig gear and to include 1993 data to the extent possible. The public review draft that was released in May indicated that information concerning the jig fishery and the 1993 cod fisheries would be included in an addendum.

2.0 JIG FISHERY

Jigging machines were developed in the Iceland and the Faroe Islands. They have been used to harvest large quantities of cod and other groundfish in those areas. Many vessels in the Faroe Islands fisheries use both longline and jig gear because the jig fishery is seasonal. In 1991, the Faroe Island jig and longline fleet consisted of 181 vessels less than 31 feet, 85 vessels between 31 and 60 feet, and 50 vessels of at least 60 feet. The most rapid growth in vessel numbers was in the smallest size class and the least rapid was in the largest size class.

The reported advantages of jig gear include the following:

1. a small number of jigging machines can be used effectively on relatively small fishing vessels;
2. the cost of the jigging machines is relatively low (from less than \$1,000 for a semi-automatic machine to about \$4,000 for a fully automated machine);
3. bycatch rates for halibut, other species, and undersized target species tend to be low, in part because it is readily apparent whether the fishing area is one that tends to have higher bycatches;
4. halibut discard mortality rates are expected to be low because the halibut are only on the hook for few minutes before they are released and they can be released in the water;
5. gear conflicts with other vessels are minimal;
6. operating costs can be quite low;
7. a very high quality product is possible because the catch has been on the hook only a few minutes before it is brought aboard the vessel and bled;
8. there is a minimal potential either for an adverse effect on the habitat or for continued fishing by lost gear; and
9. it is a safe fishery with no gear to retrieve in bad weather.

Very limited information is available concerning the BSAI cod jig fishery. For example, the PacFIN database does not include jig as a separate gear in recent years and there is Domestic Observer Program bycatch data for only one jig vessel cruise. More observer data are not available because the vessels in that fishery are small enough to require from 0% to 30% observer coverage. NMFS catch data indicate that the annual groundfish catch in the BSAI with jig gear has been less than 100 mt.

Participants in the fishery have indicated that they receive about \$0.50 per pound for cod that is used as bait in the crab fisheries, \$0.35 to \$0.45 per pound for cod that is flown out to compete in the high quality fresh cod market, and \$0.15 to \$0.18 for cod that is processed in Dutch Harbor. Their ability to take full advantage of the crab bait markets is dependent upon their ability to harvest cod just prior to or during the major BSAI crab fisheries. For example, in 1993 the early closure of the BSAI cod fisheries will prevent jig fishermen from catching cod in the BSAI for the red king crab fishery. Their ability to participate effectively in the market for high quality fresh cod is currently limited by their inability to provide consistent quantities of cod on a year round basis. The bait and fresh cod markets provide sufficiently high exvessel prices to make the jig fishery profitable for the current participants. After paying the typical trip costs, the remainder that is available to the operator and crew is substantially greater than the opportunity cost of their labor if the cod are delivered for either of the two higher priced uses. If the cod is sold to a local processor for \$0.15 to \$0.18 per pound, it is at best a marginal fishery.

Fishermen who have used jig gear to harvest small amounts of cod in the BSAI have asked that any allocation of the BSAI cod TAC among gear groups include a separate allocation for jig gear. Their justification for such an allocation is in part based on the assumption that a small allocation to the cod jig fishery would permit the 10 to 12-month per year cod jig fishery that is necessary to successfully participate both in the market for crab bait and in the market for fresh, high quality cod. There are two reasons why a small separate allocations for jig gear will not assure a year round jig fishery. First, unless jig gear is exempted from the cod fishery hook and line halibut PSC allowance or given a separate PSC allowance, the attainment of hook and line PSC allowance would close the jig fishery. Second, once the other cod fisheries are closed, additional vessels would be attracted to the jig fishery and, therefore, the cod allocation for jig gear could be taken much more rapidly than expected. The PSC limit would have been a problem for the jig fishery in 1992 had the hook and line halibut PSC limit been in place. It would not have been a problem in 1993 because the hook and line fishery was not close to taking its halibut PSC limit when it was closed by the TAC.

3.0 THE 1993 COD FISHERIES

Several of the Tables that were included in the May draft have been updated to include 1993 data, additional tables were prepared, and the estimates of net benefits per metric ton of cod catch (ANB) were revised using 1991 and 1992 prices from the Annual Processor Survey. The updated tables are as follows: Table A18, BSAI blend estimates of catch by species and target fishery; Table A20 estimated BSAI bycatch mortality by species and target fishery; and Table A22 estimated BSAI bycatch mortality rates by species and target fishery. The additional tables are: Table 1, updated 1993 catch data through May 1 and May 29; Table 2, estimates of bird take and take rates by gear; Table 3, IPHC estimates of the discounted halibut yield loss per metric ton of halibut bycatch mortality by cod fishery, month, and area; Table 4, estimates of cod H&G and fillet prices and the seasonal adjustments; Table 5, estimated GOA bycatch mortality by species and target fishery; and Table 6, estimated GOA bycatch mortality rates by species and target fishery.

Based on the preliminary 1993 BSAI Pacific cod catch estimates through May 29 and assuming the rest of the cod TAC will be taken as bycatch in other groundfish fisheries, the estimates of cod catch in

thousands of metric tons for each of the three cod fisheries and all other groundfish fisheries for 1990-93 are as follows:

	Pacific Cod Fisheries			Other Fisheries	Total
	Longline	Pot	Trawl		
1990	47.4	1.4	86.8	31.9	167.5
1991	79.6	6.7	90.1	41.7	218.1
1992	100.9	13.7	47.9	42.8	205.3
1992 adj	72.5	13.7	55.8	42.8	184.8
1993	63.9	2.2	59.8	38.6	164.5.

The adjusted estimates for 1992 are explained below.

Given these catch estimates, the percent of total cod catch accounted for by each fishery each year is as follows:

	Pacific Cod Fisheries			Other Fisheries	Total
	Longline	Pot	Trawl		
1990	28.3	0.8	51.8	19.0	100.0
1991	36.5	3.1	41.3	19.1	100.0
1992	49.1	6.7	23.3	20.8	100.0
1992 adj	39.2	7.4	30.2	23.2	100.0
1993	38.9	1.4	36.3	23.4	100.0.

The 1990 estimates probably understate actual catch because they are based on Weekly Processor Report (WPR) data not blend data. The effect on the percent taken in each fishery in 1990 will not be known until blend estimates are generated for 1990.

The 1992 distribution of cod catch among the three cod fisheries was thought to have been determined in part by the late implementation both of the separate halibut PSC allowance for the cod trawl fishery and of the halibut PSC limit for the longline fishery. The adjusted catch estimates for 1992 (1992 adj) are estimates of what the 1992 catches would have been: (1) if the full cod trawl fishery halibut PSC bycatch allowance of 2,359 mt had been available for the cod trawl fishery, (2) if the longline fishery had been closed once its 750 mt halibut bycatch mortality allowance had been taken, and (3) if the blend estimates of catch had been used to estimate when the cod TAC and each of these two PSC allowances were taken.

The estimates of ANB were revised for three reasons. First, the IPHC recently provided estimates of the discounted halibut yield loss per metric ton of halibut bycatch mortality by fishery, month, and area. Previously, estimates were not available by month or area. Second, the FOB Alaska prices that were used for cod H&G and fillet products did not reflect the prices of all sizes of cod in all the cod markets. Third, the seasonal price adjustments that had been used for H&G cod resulted in the annual average price being understated.

The IPHC estimates of discounted yield loss are for 1990 and 1991. For several areas and months, the estimates for the trawl fishery in particular are substantially higher for 1991 than for 1990. The explanation is that in 1991 the halibut tended to be smaller and smaller halibut result in a higher yield loss. The change in the size distribution of the halibut bycatch and the resulting increase in the yield loss estimates for 1991 probably are in part explained by the exceptionally strong 1987 halibut year class. As the halibut in this year class grow and migrate out of the BSAI, the yield loss will tend to decrease. Due to the uncertainty concerning what the yield loss rates were in 1992 or 1993, separate estimates of the cost

of halibut bycatch mortality were made for each year (1991, 1992, and 1993) using the yield loss rate estimates for 1990 and 1991.

1991 and 1992 Annual Processor Survey data were used to estimate the weighted average prices of eastern and western cut H&G cod by gear and the weighted average price of cod fillets. This was done by using product quantity and value data for the groups of catcher/processors that predominately used one type of gear each year. The resulting price estimates are presented in Table 4. Because there was not sufficient time to process the 1992 survey data for all product forms, 1991 survey prices were used for all other products. Due to the uncertainty concerning what the FOB prices will be for 1993 and beyond, separate estimates of ANB were made for each year (1991, 1992, and 1993) using the 1991 and 1992 cod H&G and fillet prices.

The final change was that the seasonal price adjustments for H&G cod were corrected so that they result in annual average prices that more closely approximate the annual base prices. The revised seasonal adjustment factors are in Table 4. The revised estimates of ANB and the components of ANB by fishery, trimester, month and year for the two sets of cod product prices and the two sets of halibut yield loss factors are in Tables 7 - 14. Previously, monthly estimates of ANB had not been made. The inclusion of monthly estimates allows a more complete evaluation of the seasonality and variability of ANB by fishery.

The 1993 halibut bycatch mortality estimates through April indicate that halibut bycatch mortality would be reduced by replacing first trimester trawl catch with first trimester longline catch or by replacing first trimester trawl and longline catch with first trimester pot catch. The same conclusion was made previously based on 1991 and 1992 data.

Some of the conclusions that can be drawn from the revised estimates of ANB and its components (Table 7 - 14) are listed below.

1. During the first trimester in 1991, ANB was higher for the longline fishery than for the trawl fishery and there was no overlap when 1991 prices were used; however, when 1992 prices were used there was considerable overlap between the estimates of ANB for the longline and trawl fisheries. There are no estimates for the first trimester pot fishery in 1991.
2. During the first trimester in 1992, the pot fishery had the highest ANB and the trawl fishery had the lowest ANB and there were no overlaps when 1991 prices were used; however, when 1992 prices were used there was considerable overlap between the longline and trawl fisheries, but the pot fishery still had the highest ANB with no overlap.
3. During the first trimester of 1993, the longline fishery had the highest ANB when 1991 prices were used and there was only overlap between the ANB estimates for the pot and trawl fisheries. When 1992 prices and the lower halibut yield loss estimates were used, there was also some overlap between the estimates for the longline and trawl fisheries.
4. In both 1991 and 1992 ANB in the longline fishery decreased substantially from the first to third trimester and there was no overlap between the estimates for these two trimesters.

5. 1991 prices and 1991 halibut yield loss estimates generate the most favorable ANB estimates for the longline fishery (Table 13). These estimates indicate that replacing first trimester trawl catch with first trimester longline catch would increase net benefits; however, replacing first trimester trawl catch with third trimester longline catch would tend to decrease net benefits. Even in 1991, when the longline fishery continued into December, ANB for the first trimester trawl fishery tended to exceed the ANB of the longline fishery each month during the third trimester (Table 14).

Table A18 Blend estimates of BSAI ground fish catch by species and target fishery, 1991 - April 1993 (total catch in metric tons).

	Pacific cod	Arrow tooth	Atka mack	Flat other	Pollock	Rock sole	Rock fish	Sable fish	Turbot	Yellow fin	Other	Total
1991												
Longline target												
Cod	79,387	2,155	3	327	2,576	22	288	358	575	3	7,225	92,920
Arr	.	5	.	.	.	.	0	3	1	.	0	8
Rckf	2	1	.	3	.	.	13	9	3	.	0	30
Sabl	283	196	0	26	8	0	279	2,528	1,300	.	125	4,745
Turb	0	1	.	1	.	.	1	6	12	.	2	23
Oth	25	1	.	0	0	.	.	.	.	.	35	61
Subtot	79,697	2,358	4	357	2,584	22	581	2,905	1,890	3	7,386	97,787
Pot target												
Cod	6,673	1	2	1	3	0	2	0	0	39	224	6,943
Sabl	.	0	.	.	.	.	.	0	0	.	.	0
Oth	.	.	.	.	.	.	.	.	.	.	0	0
Subtot	6,673	1	2	1	3	0	2	0	0	39	224	6,944
Trawl target												
Cod	90,141	3,466	897	4,509	41,060	6,560	2,648	17	190	592	4,799	154,879
Arr	25	1,463	2	126	171	2	99	30	403	0	113	2,434
Atk	2,411	172	24,975	56	926	122	814	55	46	.	884	30,459
Flat	957	602	.	4,027	3,112	1,235	19	2	9	4,276	891	15,129
PolB	22,013	7,814	562	5,758	336,500	2,585	645	28	209	856	4,172	381,142
PolP	4,621	575	8	1,411	121,519	234	289	1	123	52	1,485	122,395
Rcks	6,365	712	1	6,157	20,040	36,283	88	8	1	7,231	2,830	79,715
Rckf	1,028	1,497	215	361	809	106	5,270	47	127	6	603	10,069
Sabl	12	155	.	19	28	.	29	97	189	.	23	551
Turb	115	1,995	70	152	221	9	106	257	5,060	0	213	8,196
Yelf	3,994	175	1	13,410	8,062	9,665	29	1	0	104,596	3,802	143,735
Oth	2	45	.	5	2	0	0	1	0	.	20	76
Subtot	131,683	18,671	26,732	35,991	162,612	56,800	10,035	543	6,357	117,609	19,835	205,038
Total	218,052	21,030	26,737	36,349	162,905	56,823	10,617	3,448	8,248	117,651	27,445	215,547

Table A18 (Continued).

1992	Pacific cod	Arrow tooth	Atka mack	Flat other	Pollock	Rock sole	Rock fish	Sable fish	Turbot	Yellow fin	Other	Total
Longline target												
Cod	100,903	1,655	57	275	3,188	28	838	179	576	91	11,166	118,957
Rckf	.	1	.	0	.	.	1	0	2	.	0	4
Sabl	139	268	.	6	1	.	304	1,807	1,445	.	146	4,116
Subtot	101,042	1,924	57	281	3,190	28	1,143	1,987	2,024	91	11,312	123,077
Pot target												
Cod	13,680	3	12	1	7	2	3	13	9	24	669	14,423
Sabl	0	0	.	.	0	.	0	0	.	.	0	1
Oth	.	.	.	.	.	.	.	.	.	.	15	15
Subtot	13,680	4	12	1	7	2	3	13	9	24	684	14,439
Trawl target												
Cod	47,885	2,865	3,073	2,487	16,679	3,502	1,176	10	81	277	3,007	81,042
Atk	3,404	205	44,358	39	683	44	3,494	5	34	0	193	52,460
Flat	449	351	13	1,342	1,327	699	33	1	14	1,527	1,583	7,339
PolB	19,615	3,743	296	7,388	635,298	6,651	507	6	174	818	4,567	679,063
PolP	3,657	325	44	1,223	756,951	443	132	2	134	23	1,356	764,290
Rcks	5,292	526	8	4,845	10,073	26,094	0	.	0	6,636	1,974	55,448
Rckf	1,232	1,556	2,164	243	1,338	61	11,936	25	220	0	552	19,328
Sabl	.	1	.	.	.	.	2	26	2	.	1	31
Yelf	8,533	437	1	17,033	12,815	14,413	0	0	1	137,384	7,915	198,533
Oth	193	7	.	1	4	0	33	.	0	.	650	888
Subtot	90,261	10,017	49,957	34,601	1435168	51,907	17,314	75	661	146,664	21,797	1858422
Total	205,175	11,950	50,035	34,884	1438371	51,938	18,464	2,104	2,768	146,781	33,808	1996278

Table A18 (Continued).

1993	Pacific cod	Arrow tooth	Atka mack	Flat other	Pollock	Rock sole	Rock fish	Sable fish	Turbot	Yellow fin	Other	Total
Longline target												
Cod	57,664	575	12	196	1,787	15	218	49	102	3	6,673	67,295
Arr	0	4	0	0	0	0	59	18	1	0	3	9
Rckf	4	6	0	0	0	0	115	699	282	0	1	96
Sabl	19	51	0	0	0	0	392	767	393	0	34	1,200
Subtot	57,687	636	12	196	1,788	15	392	767	393	3	6,711	68,600
Pot target												
Cod	1,328	0	0	0	1	0	0	0	0	8	24	1,362
Subtot	1,328	0	0	0	1	0	0	0	0	8	24	1,362
Trawl target												
Cod	57,466	1,546	2,891	2,688	28,654	5,629	1,221	2	58	713	2,891	103,758
Arr	0	2	0	0	0	0	1	2	2	0	0	7
Atk	1,631	57	32,213	0	49	34	1,193	3	2	0	147	35,328
Flat	27	25	7	49	168	13	12	0	0	31	23	355
PolB	14,233	1,490	15	3,483	202,133	6,068	47	0	16	801	2,335	230,620
PolP	1,609	43	0	254	388,879	165	26	0	12	4	549	391,540
Rcks	6,257	420	1	2,229	12,438	36,109	7	1	11	947	1,556	59,976
Rckf	772	1,029	2,184	186	1,640	45	12,849	45	610	0	548	19,908
Yelf	10	0	0	15	12	6	0	0	0	169	6	218
Oth	9	17	0	27	11	3	0	0	0	0	22	90
Subtot	82,013	4,629	37,311	8,932	633,983	48,071	15,355	53	712	2,664	8,076	841,800
Total	141,067	5,269	37,323	9,128	636,073	48,086	15,749	830	1,140	2,676	14,815	912,156

Source: NMFS Alaska Region blend estimates.

Table A20 Estimated bycatch mortality for BSAI domestic groundfish fisheries by species and fishery, 1991 - 1993.

1991

Longline

Pacific cod	726.5	4,254	70	54	.0
Rockfish	.6	0	0	0	.0
Sablefish	67.8	13	32	0	.0
Other	.2	5	0	0	.0
Unknown	.2	0	0	0	.0

Pot

Pacific cod	3.2	42,626	3,643	0	.0
Sablefish	.0	0	0	0	.0
Other	.0	0	0	0	.0

Trawl

Pacific cod	1,781.1	523,539	3,232	7,341	16.9
Atka mackerel	49.2	250	116	137	.0
Flatfish	343.6	205,752	2,984	88	32.4
Bottom pollock	695.1	807,501	2,056	5,328	277.8
Pelagic pollock	215.5	39,995	206	27,727	540.7
Rock sole	947.5	702,017	77,913	872	26.8
Rockfish	100.5	4,207	132	815	.2
Sablefish	16.5	575	2	1	.0
Yellowfin	549.4	634,090	18,715	528	576.6
Other	.5	2,070	0	2	.0
Unknown	2.8	812	90	1	.5

1992

Longline

Pacific cod	1,567.0	8,472	1,551	48	.0
Rockfish	.1	0	0	0	.0
Sablefish	47.3	6	21	0	.0
Unknown	.5	8	0	0	.0

Pot

Pacific cod	5.6	87,856	3,161	0	.0
Sablefish	.0	0	0	0	.0
Other	.0	0	0	0	.0
Unknown	.0	0	0	0	.0

Trawl

Pacific cod	1,085.2	156,021	129	4,945	5.7
Atka mackerel	76.4	451	104	34	.0
Flatfish	30.6	73,344	1,941	10	1.0
Bottom pollock	1,219.8	1,220,716	34,802	15,961	25.1
Pelagic pollock	175.0	8,179	700	20,572	612.6
Rock sole	557.2	665,912	48,687	36	9.7
Rockfish	140.8	3,344	699	1,169	.0
Sablefish	.3	0	0	0	.0
Yellowfin	603.8	1,251,331	51,809	190	409.0
Other	1.0	5	0	3	.0
Unknown	4.7	2,942	25	3	.2

Table A20 -- Continued

	HALIBUT	BAIRDI	R.KING CRAB	CHINOOK	ERRING
1993					
Longline					
Pacific cod	371.4	3,286	123	65	.0
Rockfish	.5	0	0	0	.0
Sablefish	27.2	0	0	0	.0
Unknown	.0	0	0	0	.0
Pot					
Pacific cod	.1	35	0	0	.0
Trawl					
Pacific cod	1,093.7	100,102	1,026	4,998	26.4
Atka mackerel	28.9	98	0	2	.0
Flatfish	5.2	1,941	234	0	.0
Bottom pollock	704.5	1,287,807	45,074	4,855	2.7
Pelagic pollock	88.6	17,473	20	13,685	.5
Rock sole	427.0	311,982	116,098	26	.3
Rockfish	75.0	54	140	1,149	.0
Yellowfin	1.5	1,105	435	0	.0
Other	8.3	6,486	0	0	.3
Unknown	2.5	541	1,296	53	.0
Totals by year and gear	HALIBUT	BAIRDI	R.KING CRAB	CHINOOK	ERRING
1991					
Longline	796.9	4,273	103	54	.0
Pot	3.2	42,626	3,643	0	.0
Trawl	4,701.8	2,920,808	105,445	42,840	1,472.0
1992					
Longline	1,614.8	8,486	1,572	48	.0
Pot	5.6	87,856	3,161	0	.0
Trawl	3,894.8	3,382,243	138,896	42,922	1,063.2
1993					
Longline	399.2	3,286	123	65	.0
Pot	.1	35	0	0	.0
Trawl	2,435.3	1,727,589	164,323	24,767	30.1
1991	5,500.3	2,967,707	109,191	42,894	1,472.0
1992	5,515.2	3,478,585	143,629	42,970	1,063.2
1993	2,834.6	1,730,910	164,446	24,831	30.1

Source: Blend estimates and Observer PSC data 1991 - May 1, 1993.

Note: Pot bycatch has been adjusted for mortality by gear; trawl and longline bycatch has been adjusted for mortality by gear and target.

ble A22 Estimated bycatch mortality rates for BSAI domestic groundfish fisheries by species and fishery, 1991 - 1993.

	HALIBUT	BAIRDI	R.KING CRAB	CHINOOK	HERRING
1991					
Longline					
Pacific cod	.79	.05	.00	.00	.00
Rockfish	2.01	.01	.00	.00	.00
Sablefish	1.43	.00	.01	.00	.00
Other	.39	.07	.00	.00	.00
Unknown	1.02	.01	.00	.00	.00
Pot					
Pacific cod	.05	6.14	.52	.00	.00
Sablefish	.00	.00	.00	.00	.00
Other	.00	.00	.00	.00	.00
Trawl					
Pacific cod	1.15	3.38	.02	.05	.01
Atka mackerel	.16	.01	.00	.00	.00
Flatfish	1.47	8.82	.13	.00	.14
Bottom pollock	.19	2.17	.01	.01	.07
Pelagic pollock	.02	.03	.00	.02	.04
Rock sole	1.19	8.81	.98	.01	.03
Rockfish	1.00	.42	.01	.08	.00
Sablefish	3.00	1.04	.00	.00	.01
Yellowfin	.38	4.41	.13	.00	.40
Other	.66	27.26	.00	.03	.00
Unknown	.56	1.64	.18	.00	.10
1992					
Longline					
Pacific cod	1.32	.07	.01	.00	.00
Rockfish	2.49	.05	.00	.00	.00
Sablefish	1.15	.00	.01	.00	.00
Unknown	.29	.05	.00	.00	.00
Pot					
Pacific cod	.04	6.09	.22	.00	.00
Sablefish	.00	.00	.00	.00	.00
Other	.00	.00	.00	.00	.00
Unknown	.35	.00	.00	.00	.00
Trawl					
Pacific cod	1.34	1.93	.00	.06	.01
Atka mackerel	.15	.01	.00	.00	.00
Flatfish	.42	9.99	.26	.00	.01
Bottom pollock	.18	1.81	.05	.02	.00
Pelagic pollock	.02	.01	.00	.03	.08
Rock sole	1.00	12.01	.88	.00	.02
Rockfish	.73	.17	.04	.06	.00
Sablefish	.83	.00	.00	.00	.00
Yellowfin	.30	6.30	.26	.00	.21
Other	.11	.01	.00	.00	.00
Unknown	.85	5.30	.05	.01	.03

Table A22 -- continued

	HALIBUT	BAIRDI	R.KING CRAB	CHINOOK	HERRING
1993					
Longline					
Pacific cod	.55	.05	.00	.00	.00
Rockfish	.54	.00	.00	.00	.00
Sablefish	2.27	.00	.00	.00	.00
Unknown	1.38	.00	.00	.00	.00
Pot					
Pacific cod	.01	.03	.00	.00	.00
Trawl					
Pacific cod	1.05	.96	.01	.05	.03
Atka mackerel	.08	.00	.00	.00	.00
Flatfish	1.43	5.28	.64	.00	.00
Bottom pollock	.31	5.59	.20	.02	.00
Pelagic pollock	.02	.04	.00	.03	.00
Rock sole	.71	5.20	1.94	.00	.00
Rockfish	.38	.00	.01	.06	.00
Yellowfin	.69	5.06	1.99	.00	.00
Other	9.21	72.38	.00	.00	.32
Unknown	.65	1.39	3.32	.14	.00
	HALIBUT	BAIRDI	R.KING CRAB	CHINOOK	HERRING
1991					
Longline	.81	.04	.00	.00	.00
Pot	.05	6.14	.52	.00	.00
Trawl	.23	1.43	.05	.02	.07
1992					
Longline	1.31	.07	.01	.00	.00
Pot	.04	6.08	.22	.00	.00
Trawl	.21	1.82	.07	.02	.06
1993					
Longline	.58	.05	.00	.00	.00
Pot	.01	.03	.00	.00	.00
Trawl	.29	2.05	.20	.03	.00
	HALIBUT	BAIRDI	R.KING CRAB	CHINOOK	HERRING
1991	.26	1.38	.05	.02	.07
1992	.28	1.74	.07	.02	.05
1993	.31	1.90	.18	.03	.00

Source: Blend estimates and Observer PSC data 1991 - May 1, 1993.

Note: Pot bycatch has been adjusted for mortality by gear; trawl and longline bycatch has been adjusted for mortality by gear and target. The halibut and herring bycatch mortality rates are bycatch mortality as a percent of groundfish catch. The crab and salmon rates are in terms of the number of crab and salmon, respectively, per metric ton of groundfish catch.

Table 1 Updated 1993 BSAI catch estimates.

Pacific cod catch estimates by gear type from Observer Reports and Weekly Production Reports through May 1, 1993

Bering Sea & Aleutian Islands

Longline Target

Cod	57664
Rockfish	18
Sablefish	19
TOTAL	57701

Pot Target

Cod	1328
Sablefish	0
Other	0
TOTAL	1328

Trawl Target

Cod	57972
Atka Mackerel	1631
Deep Flats	---
Shallow Flats	---
Bottom Plck	9660
Pelagic Plck	5672
RSole/OFlats	6286
Rockfish	770
Sablefish	0
Yellowfin Sole	0
Other	107
TOTAL	82098

Gulf of Alaska

Longline Target

Cod	7754
Rockfish	14
Sablefish	0
TOTAL	7768

Pot Target

Cod	9434
Sablefish	0
Other	0
TOTAL	9434

Trawl Target

Cod	30534
Atka Mackerel	---
Deep Flats	969
Shallow Flats	504
Bottom Plck	1155
Pelagic Plck	171
RSole/OFlats	---
Rockfish	93
Sablefish	3
Yellowfin Sole	0
Other	228
TOTAL	33657

1993 Estimated retained, discarded, and total catch for BSAI Cod fisheries from Observer Reports and Weekly Production Reports through May 29, 1993.

Gear/Species	Retained	Discarded	Total	% Retained

Longline				
Cod	60436	3486	63922	94.5%
Other Groundfish	1756	9512	11268	15.6
Pot				
Cod	2213	34	2247	98.5%
Other Groundfish	3	64	67	4.5
Trawl				
Cod	51855	7931	59786	86.7%
Other Groundfish	4583	42961	47544	9.6

Table 2 Number of birds and birds per metric ton of catch by gear type
 - - BSAI

Year	Gear type	Birds	Birds/mt of catch
1991	Bottom Trawl	0	0.0000
	Pelagic Trawl	1514	0.0020
	Pair Trawl	2	0.0002
	Pot	8	0.0027
	Longline	9941	0.1413
1992	Bottom Trawl	15	0.0000
	Pelagic Trawl	4	0.0000
	Pair Trawl	0	0.0000
	Pot	10	0.0016
	Longline	2554	0.0257

Table 3

Estimates of halibut yield loss per metric ton on halibut bycatch mortality by year, area, and month for the Pacific cod longline and trawl fisheries, 1990 and 1991.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1990 Longline												
Area												
511	1.10	1.10	1.10	1.10	1.10	1.10	1.00	1.00	1.10	1.10	1.10	1.10
512	1.10	1.10	1.10	1.10	1.10	1.10	1.00	1.00	1.10	1.10	1.10	1.10
513	1.10	1.10	1.10	1.10	1.10	1.10	1.00	1.00	1.10	1.10	1.10	1.10
514	1.10	1.10	1.10	1.10	1.10	1.10	1.00	1.00	1.10	1.10	1.10	1.10
515	1.10	1.10	1.10	1.10	1.10	1.10	1.00	1.00	1.10	1.10	1.10	1.10
516	1.10	1.10	1.10	1.10	1.10	1.10	1.00	1.00	1.10	1.10	1.10	1.10
517	1.10	1.10	1.10	1.10	1.10	1.10	1.00	1.00	1.10	1.10	1.10	1.10
518	1.10	1.10	1.10	1.10	1.10	1.10	1.00	1.00	1.10	1.10	1.10	1.10
519	1.10	1.10	1.10	1.10	1.10	1.10	1.00	1.00	1.10	1.10	1.10	1.10
521	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
522	1.20	1.20	1.20	1.20	1.20	1.10	1.10	1.20	1.20	1.20	1.20	1.20
540	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
1990 Trawl												
511	2.50	2.50	2.50	2.50	1.40	.	.	.	.	.	.	.
513	2.50	2.50	2.50	2.50	1.40	.	.	.	.	.	.	.
514	2.50	2.50	2.50	2.50	1.40	.	.	.	.	.	.	.
515	2.10	2.10	1.90	1.90	1.20	.	.	.	.	.	.	2.10
516	2.10	2.10	1.90	1.90	1.20	.	.	.	.	.	.	2.10
517	2.10	2.10	1.90	1.90	1.20	.	.	.	.	.	.	2.10
518	2.10	2.10	1.90	1.90	1.20	.	.	.	.	.	.	2.10
519	2.10	2.10	1.90	1.90	1.20	.	.	.	.	.	.	2.10
521	.	1.40	1.40	1.50	1.50	1.30	1.30	.	.	.	.	.
522	.	.	1.70	1.70	1.70	1.30	1.30	.	.	.	.	.
540	.	.	1.70	1.70	1.70	1.30	1.30	.	.	.	.	.
1991 Longline												
511	1.20	1.20	1.20	1.20	1.20	1.10	1.10	1.20	1.20	1.20	1.20	1.20
512	1.20	1.20	1.20	1.20	1.20	1.10	1.10	1.20	1.20	1.20	1.20	1.20
513	1.20	1.20	1.20	1.20	1.20	1.10	1.10	1.20	1.20	1.20	1.20	1.20
514	1.20	1.20	1.20	1.20	1.20	1.10	1.10	1.20	1.20	1.20	1.20	1.20
515	1.20	1.20	1.20	1.20	1.20	1.10	1.10	1.20	1.20	1.20	1.20	1.20
516	1.20	1.20	1.20	1.20	1.20	1.10	1.10	1.20	1.20	1.20	1.20	1.20
517	1.20	1.20	1.20	1.20	1.20	1.10	1.10	1.20	1.20	1.20	1.20	1.20
518	1.20	1.20	1.20	1.20	1.20	1.10	1.10	1.20	1.20	1.20	1.20	1.20
519	1.20	1.20	1.20	1.20	1.20	1.10	1.10	1.20	1.20	1.20	1.20	1.20
521	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
522	1.30	1.30	1.30	1.30	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
540	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
1991 Trawl												
511	3.20	3.20	3.20	3.20	2.00	.	.	.	.	.	.	.
513	3.20	3.20	3.20	3.20	2.00	.	.	.	.	.	.	.
514	3.20	3.20	3.20	3.20	2.00	.	.	.	.	.	.	.
515	2.50	2.50	2.50	2.50	2.50	.	.	.	.	.	.	.
516	2.50	2.50	2.50	2.50	2.50	.	.	.	.	.	.	.
517	2.50	2.50	2.50	2.50	2.50	.	.	.	.	.	.	.
518	2.50	2.50	2.50	2.50	2.50	.	.	.	.	.	.	.
519	2.50	2.50	2.50	2.50	2.50	.	.	.	.	.	.	.
521	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
522	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
540	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50

Source: IPHC

Table 4 Estimated FOB Alaska prices for cod H&G and fillet products and the seasonal adjustments for H&G prices, 1991 and 1992.

	Dollars/pound		
	Longline	Pot	Trawl
1991 Cod H&G western cut	0.87	0.83	0.81
1992 Cod H&G western cut	0.80	0.72	0.68
1991 Cod H&G eastern cut	1.02	0.84	0.93
1992 Cod H&G eastern cut	0.84	0.70	0.64
1991 cod fillets	2.13	2.13	2.13
1992 cod fillets	2.12	2.12	2.12

Seasonal price adjustment factors for H&G cod

January - April	1.03
May - August	0.86
September - October	0.97
November-December	1.14

Note: the cod fillet price is a weighted average for all fillet products.

Sources: The prices are based on Annual Processor Survey data and the seasonal price adjustments were provided by LGL Alaska Inc.

Table 5 Estimated bycatch mortality for GOA domestic groundfish fisheries by species and fishery, 1991 - 1993.

Fishery	HALIBUT	BAIRDI	R.KING CRAB	CHINOOK	HERRING
1991 -- Gulf of Alaska					
Longline					
Pacific cod	161.4	2	0	0	.0
Rockfish	10.2	0	0	0	.0
Sablefish	1,200.5	150	0	0	.0
Unknown	.6	0	0	0	.0
Pot					
Pacific cod	2.5	12,919	44	0	.0
Other	.0	0	0	0	.0
Unknown	.0	0	0	0	.0
Trawl					
Pacific cod	699.4	47,418	8	7,001	.1
Arrowtooth	94.3	969	0	96	.0
Deep flatfish	767.5	9,289	78	3,406	.0
Shallow flatfish	25.0	2,323	7	113	.0
Bottom pollock	125.4	16,391	0	2,812	.0
Pelagic pollock	19.5	2,110	0	3,759	2.0
Rockfish	788.7	7,950	2	22,209	.2
Sablefish	12.1	1,130	0	399	.0
Other	28.6	5,979	2	50	.0
Unknown	.3	4	0	1	.0
1992 -- Gulf of Alaska					
Longline					
Pacific cod	525.8	100	0	0	.0
Shallow flatfish	.4	0	0	0	.0
Rockfish	13.3	0	0	0	.0
Sablefish	982.6	109	0	19	.0
Other	1.3	0	0	0	.0
Unknown	1.9	0	0	0	.0
Pot					
Pacific cod	4.6	8,329	3	0	.0
Rockfish	.0	0	0	0	.0
Other	.0	0	0	0	.0
Unknown	.0	0	0	0	.0
Trawl					
Pacific cod	550.3	36,451	14	5,944	.0
Arrowtooth	6.6	44	0	10	.0
Deep flatfish	600.6	31,314	23	2,325	.0
Shallow flatfish	186.2	15,605	16	168	.1
Bottom pollock	30.0	1,775	0	1,692	24.2
Pelagic pollock	45.1	5,681	0	4,543	18.7
Rockfish	473.9	5,077	0	2,047	.9
Sablefish	1.7	23	0	6	.0
Other	113.7	710	0	877	.0
Unknown	2.3	1	0	1	.0

Table 5 -- continued

Fishery	HALIBUT	BAIRDI	R.KING CRAB	CHINOOK	HERRING
1993 - - Gulf of Alaska					
Longline					
Pacific cod	81.0	20	0	0	.0
Rockfish	4.8	0	0	0	.0
Sablefish	.2	0	0	0	.0
Unknown	.0	0	0	0	.0
Pot					
Pacific cod	2.3	7,201	0	0	.0
Other	.0	2	0	0	.0
Trawl					
Pacific cod	412.9	27,847	155	1,154	.0
Arrowtooth	116.6	327	0	190	.0
Deep flatfish	397.1	4,608	0	2,128	.0
Shallow flatfish	69.8	815	0	24	.0
Bottom pollock	99.4	1,027	0	1,889	.0
Pelagic pollock	.0	0	0	6,491	.0
Rockfish	77.8	16	0	447	.0
Sablefish	2.8	0	0	26	.0
Other	37.9	19	0	25	.0
Unknown	1.1	13	0	93	.0
Totals by Year and Gear	HALIBUT	BAIRDI	R.KING CRAB	CHINOOK	HERRING
1991					
Longline	1,372.7	152	0	0	.0
Pot	2.5	12,919	44	0	.0
Trawl	2,560.7	93,563	96	39,845	2.3
1992					
Longline	1,525.3	209	0	19	.0
Pot	4.6	8,329	3	0	.0
Trawl	2,010.4	96,681	53	17,611	44.0
1993					
Longline	86.0	20	0	0	.0
Pot	2.3	7,203	0	0	.0
Trawl	1,215.5	34,673	155	12,467	.0
1991	3,935.8	106,633	140	39,845	2.3
1992	3,540.3	105,220	55	17,629	44.0
1993	1,303.8	41,896	155	12,467	.0

Source: Blend estimates and Observer PSC data 1991 - May 1, 1993.

Note: Pot bycatch has been adjusted for mortality by gear; trawl and longline bycatch has been adjusted for mortality by gear and target.

Table 6 Estimated bycatch mortality rates for GOA domestic groundfish fisheries by species and fishery, 1991 - 1993.

Fishery	HALIBUT	BAIRDI	R.KING CRAB	CHINOOK	HERRING
1991 - - Gulf of Alaska					
Longline					
Pacific cod	2.12	.00	.00	.00	.00
Rockfish	1.58	.00	.00	.00	.00
Sablefish	4.91	.01	.00	.00	.00
Unknown	11.30	.00	.00	.00	.00
Pot					
Pacific cod	.02	1.20	.00	.00	.00
Other	.00	.00	.00	.00	.00
Unknown	.00	.00	.00	.00	.00
Trawl					
Pacific cod	.93	.63	.00	.09	.00
Arrowtooth	3.21	.33	.00	.03	.00
Deep flatfish	3.21	.39	.00	.14	.00
Shallow flatfish	1.50	1.39	.00	.07	.00
Bottom pollock	.68	.89	.00	.15	.00
Pelagic pollock	.02	.03	.00	.05	.00
Rockfish	3.21	.32	.00	.90	.00
Sablefish	4.74	4.44	.00	1.57	.00
Other	.68	1.42	.00	.01	.00
Unknown	.96	.13	.00	.01	.00
1992 - - Gulf of Alaska					
Longline					
Pacific cod	3.27	.01	.00	.00	.00
Shallow flatfish	9.87	.00	.00	.00	.00
Rockfish	1.57	.00	.00	.00	.00
Sablefish	3.51	.00	.00	.00	.00
Other	6.13	.00	.00	.00	.00
Unknown	9.94	.00	.00	.00	.00
Pot					
Pacific cod	.05	.82	.00	.00	.00
Rockfish	.00	.00	.00	.00	.00
Other	.00	.00	.00	.00	.00
Unknown	.00	.00	.00	.00	.00
Trawl					
Pacific cod	.83	.55	.00	.09	.00
Arrowtooth	2.39	.16	.00	.04	.00
Deep flatfish	2.76	1.44	.00	.11	.00
Shallow flatfish	2.04	1.71	.00	.02	.00
Bottom pollock	.21	.12	.00	.12	.17
Pelagic pollock	.06	.08	.00	.06	.03
Rockfish	1.76	.19	.00	.08	.00
Sablefish	3.90	.55	.00	.13	.00
Other	.64	.04	.00	.05	.00
Unknown	2.40	.01	.00	.01	.00

Table 6 -- continued

Fishery	HALIBUT	BAIRDI	R.KING CRAB	CHINOOK	HERRING
1993 - - Gulf of Alaska					
Longline					
Pacific cod	.95	.00	.00	.00	.00
Rockfish	1.58	.00	.00	.00	.00
Sablefish	2.47	.00	.00	.00	.00
Unknown	9.87	.00	.00	.00	.00
Pot					
Pacific cod	.02	.75	.00	.00	.00
Other	.02	.87	.00	.00	.00
Trawl					
Pacific cod	1.13	.76	.00	.03	.00
Arrowtooth	9.68	.27	.00	.16	.00
Deep flatfish	2.93	.34	.00	.16	.00
Shallow flatfish	2.75	.32	.00	.01	.00
Bottom pollock	1.32	.14	.00	.25	.00
Pelagic pollock	.00	.00	.00	.30	.00
Rockfish	3.38	.01	.00	.19	.00
Sablefish	2.03	.00	.00	.19	.00
Other	.50	.00	.00	.00	.00
Unknown	2.40	.29	.00	2.07	.00
	HALIBUT	BAIRDI	R.KING CRAB	CHINOOK	HERRING
1991					
Longline	4.20	.00	.00	.00	.00
Pot	.02	1.20	.00	.00	.00
Trawl	1.10	.40	.00	.17	.00
1992					
Longline	3.39	.00	.00	.00	.00
Pot	.05	.82	.00	.00	.00
Trawl	.88	.42	.00	.08	.02
1993					
Longline	.97	.00	.00	.00	.00
Pot	.02	.75	.00	.00	.00
Trawl	1.31	.37	.00	.13	.00
1991	1.43	.39	.00	.14	.00
1992	1.25	.37	.00	.06	.02
1993	1.17	.38	.00	.11	.00

Source: Blend estimates and Observer PSC data 1991 - May 1, 1993.

Note: Pot bycatch has been adjusted for mortality by gear; trawl and longline bycatch has been adjusted for mortality by gear and target. The halibut and herring bycatch mortality rates are bycatch mortality as a percent of groundfish catch. The crab and salmon rates are terms of the number of crab and salmon, respectively, per metric ton of groundfish catch.

Table 7

Estimates of net benefit per metric ton of cod catch (ANB) and its components by fishery, variable cost model, season, and year for 1991 - April 1993, using 1990 halibut yield loss factors and 1991 prices.

	1991			1992			1991	1992	1993
	Jan-May	Jun-Aug	Sep-Dec	Jan-May	Jun-Aug	Sep-Dec	Jan-Dec	Jan-Dec	Jan-May
Cod Longline									
Gross	1,176	1,171	957	1,063	1,020	974	1,096	1,041	1,013
Var. cost mod1	589	608	554	543	582	625	582	563	533
Var. cost mod2	586	642	607	550	633	723	609	592	549
Var. cost mod3	656	695	644	609	674	745	662	642	602
Lo proh cost	5	15	14	9	35	23	11	20	8
Hi proh cost	5	16	16	10	38	26	12	22	9
Gf. cost	11	40	21	11	20	27	22	16	11
ANB mod1 w/lo	571	508	368	499	382	299	481	443	461
ANB mod2 w/lo	574	474	315	492	332	201	454	414	444
ANB mod3 w/lo	505	421	278	433	290	179	400	364	391
ANB mod1 w/hi	571	506	366	498	379	296	480	441	460
ANB mod2 w/hi	574	472	314	491	329	198	452	412	443
ANB mod3 w/hi	504	420	277	432	287	176	399	362	390
Cod Pot									
Gross	.	897	972	1,184	983	1,020	935	1,041	824
Var. cost mod1	.	387	479	485	551	816	433	543	514
Var. cost mod2	.	428	526	538	625	969	477	615	553
Var. cost mod3	.	469	573	592	700	1,123	521	688	592
Lo proh cost	.	1	0	1	0	1	1	1	0
Hi proh cost	.	2	5	2	2	2	3	2	0
Gf. cost	.	1	1	1	4	3	1	3	0
ANB mod1 w/lo	.	509	492	698	429	200	501	495	309
ANB mod2 w/lo	.	467	445	645	354	46	456	423	270
ANB mod3 w/lo	.	426	398	591	279	-107	412	350	231
ANB mod1 w/hi	.	508	488	697	427	198	498	493	309
ANB mod2 w/hi	.	466	440	643	353	45	453	421	270
ANB mod3 w/hi	.	425	393	590	278	-109	409	349	231
Cod Trawl									
Gross	1,221	.	.	1,150	.	.	1,221	1,150	1,095
Var. cost mod1	555	.	.	531	.	.	555	531	564
Var. cost mod2	631	.	.	600	.	.	631	600	657
Var. cost mod3	707	.	.	670	.	.	707	670	749
Lo proh cost	25	.	.	29	.	.	25	29	22
Hi proh cost	53	.	.	57	.	.	53	57	44
Gf. cost	137	.	.	134	.	.	137	134	172
ANB mod1 w/lo	504	.	.	455	.	.	504	455	337
ANB mod2 w/lo	428	.	.	386	.	.	428	386	244
ANB mod3 w/lo	352	.	.	317	.	.	352	317	152
ANB mod1 w/hi	475	.	.	428	.	.	475	428	316
ANB mod2 w/hi	399	.	.	358	.	.	399	358	223
ANB mod3 w/hi	323	.	.	289	.	.	323	289	131

Note: All figure are dollars per metric ton of cod catch. ANB w/lo and ANB w/hi, respectively, are estimates of ANB with the lower and higher estimates of the bycatch cost of prohibited species per metric ton of cod catch. There was not sufficient catch in the trawl fishery the second and third trimesters of 1991 and 1992 or in the pot fishery the first trimester of 1991 to provide meaningful estimates of ANB.

Table 8 Estimates of net benefit per metric ton of cod catch (ANB) and its components by fishery, variable cost model, month, and year for 1991 - April 1993, using 1990 halibut yield loss factors and 1991 prices.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1991												
Cod Longline												
Gross	1,107	1,255	1,198	1,180	1,140	1,073	1,174	1,243	1,091	1,062	687	1,168
Var. cost mod1	570	620	617	586	562	567	637	619	611	666	379	665
Var. cost mod2	579	610	626	579	553	582	693	651	655	761	405	721
Var. cost mod3	640	687	692	650	623	640	738	706	703	789	436	769
Lo proh cost	5	6	5	3	5	14	18	14	8	20	14	16
Hi proh cost	6	7	5	3	6	15	19	15	9	22	15	18
Gf. cost	7	17	17	6	8	12	49	55	15	26	24	14
ANB mod1 w/lo	525	612	559	586	564	481	470	555	456	350	271	472
ANB mod2 w/lo	516	622	550	593	574	465	413	523	412	255	244	417
ANB mod3 w/lo	455	545	483	522	504	408	369	468	364	227	214	368
ANB mod1 w/hi	524	611	558	585	563	480	468	554	456	348	269	471
ANB mod2 w/hi	515	621	549	592	573	464	412	522	411	253	243	415
ANB mod3 w/hi	454	545	483	521	503	407	367	467	363	225	213	367
Cod Pot												
Gross							1,226	771	873	1,001	1,106	1,249
Var. cost mod1							573	315	412	498	527	714
Var. cost mod2							632	350	450	551	576	781
Var. cost mod3							690	385	489	605	625	847
Lo proh cost								1	0	0	0	0
Hi proh cost								2	0	10	1	13
Gf. cost								1	1	1	1	1
ANB mod1 w/lo							651	454	460	502	578	534
ANB mod2 w/lo							593	419	422	448	529	468
ANB mod3 w/lo							534	384	384	395	480	401
ANB mod1 w/hi							650	453	460	492	578	521
ANB mod2 w/hi							592	418	422	438	529	455
ANB mod3 w/hi							534	383	384	385	479	388
Cod Trawl												
Gross	1,340	1,219	1,004	1,250	1,341							
Var. cost mod1	688	511	481	523	884							
Var. cost mod2	795	572	552	586	1,064							
Var. cost mod3	902	633	623	649	1,244							
Lo proh cost	38	25	20	20	56							
Hi proh cost	93	61	44	41	81							
Gf. cost	142	82	79	159	245							
ANB mod1 w/lo	471	601	425	548	156							
ANB mod2 w/lo	364	540	353	486	-24							
ANB mod3 w/lo	257	479	282	423	-204							
ANB mod1 w/hi	416	565	401	527	132							
ANB mod2 w/hi	309	504	329	464	-49							
ANB mod3 w/hi	202	444	258	401	-229							

Table 8 Continued.

1992

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Cod Longline												
Gross	1,095	1,068	1,100	1,043	1,030	1,060	997	1,016	974	.	.	.
Var. cost mod1	567	513	570	531	547	588	575	587	625	.	.	.
Var. cost mod2	578	494	581	538	572	631	627	641	723	.	.	.
Var. cost mod3	638	563	641	596	622	677	667	681	745	.	.	.
Lo proh cost	8	4	5	10	17	43	35	28	23	.	.	.
Hi proh cost	9	5	6	11	19	47	39	30	26	.	.	.
Gf. cost	13	7	10	9	19	28	17	19	27	.	.	.
ANB mod1 w/lo	506	543	515	493	447	402	370	382	299	.	.	.
ANB mod2 w/lo	495	562	503	486	422	358	317	328	201	.	.	.
ANB mod3 w/lo	436	493	443	428	372	313	278	287	179	.	.	.
ANB mod1 w/hi	505	543	514	492	445	397	367	380	296	.	.	.
ANB mod2 w/hi	494	561	503	485	420	354	314	326	198	.	.	.
ANB mod3 w/hi	435	493	443	427	370	308	274	286	176	.	.	.
Cod Pot												
Gross	965	959	.	1,210	1,184	1,084	878	1,046	1,020	.	.	.
Var. cost mod1	570	570	.	570	481	536	511	653	816	.	.	.
Var. cost mod2	634	634	.	634	534	600	582	751	969	.	.	.
Var. cost mod3	698	698	.	698	587	664	653	849	1,123	.	.	.
Lo proh cost	0	0	.	1	1	0	0	1	1	.	.	.
Hi proh cost	2	2	.	2	2	1	1	6	2	.	.	.
Gf. cost	0	0	.	2	1	3	5	2	3	.	.	.
ANB mod1 w/lo	394	388	.	637	702	545	361	391	200	.	.	.
ANB mod2 w/lo	330	324	.	573	649	481	290	292	46	.	.	.
ANB mod3 w/lo	266	260	.	509	596	417	219	194	-107	.	.	.
ANB mod1 w/hi	393	386	.	636	701	544	361	386	198	.	.	.
ANB mod2 w/hi	328	322	.	572	648	480	289	287	45	.	.	.
ANB mod3 w/hi	264	258	.	508	595	416	218	189	-109	.	.	.

Cod Trawl

Gross	1,614	1,242	1,118	1,127	1,290	.	.	.	.	.	.	.
Var. cost mod1	1,129	619	505	503	637	.	.	.	.	.	.	.
Var. cost mod2	1,310	678	566	572	750	.	.	.	.	.	.	.
Var. cost mod3	1,491	737	628	641	863	.	.	.	.	.	.	.
Lo proh cost	31	28	20	34	59	.	.	.	.	.	.	.
Hi proh cost	93	68	41	64	76	.	.	.	.	.	.	.
Gf. cost	246	121	107	147	199	.	.	.	.	.	.	.
ANB mod1 w/lo	207	475	486	443	395	.	.	.	.	.	.	.
ANB mod2 w/lo	26	415	424	374	282	.	.	.	.	.	.	.
ANB mod3 w/lo	-154	356	362	305	169	.	.	.	.	.	.	.
ANB mod1 w/hi	146	435	465	413	378	.	.	.	.	.	.	.
ANB mod2 w/hi	-35	376	403	344	265	.	.	.	.	.	.	.
ANB mod3 w/hi	-216	316	341	275	152	.	.	.	.	.	.	.

Table 8 Continued.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1993												
Cod Longline												
Gross	1,027	1,050	971	1,023	.	.	.	.	.	.	.	.
Var. cost mod1	563	538	499	548	.	.	.	.	.	.	.	.
Var. cost mod2	595	545	506	571	.	.	.	.	.	.	.	.
Var. cost mod3	644	604	560	622	.	.	.	.	.	.	.	.
Lo proh cost	7	7	10	8	.	.	.	.	.	.	.	.
Hi proh cost	8	8	11	9	.	.	.	.	.	.	.	.
Gf. cost	19	10	8	8	.	.	.	.	.	.	.	.
ANB mod1 w/lo	438	494	454	460	.	.	.	.	.	.	.	.
ANB mod2 w/lo	405	487	447	436	.	.	.	.	.	.	.	.
ANB mod3 w/lo	357	429	393	385	.	.	.	.	.	.	.	.
ANB mod1 w/hi	437	493	453	459	.	.	.	.	.	.	.	.
ANB mod2 w/hi	405	487	446	436	.	.	.	.	.	.	.	.
ANB mod3 w/hi	356	428	392	384	.	.	.	.	.	.	.	.
Cod Pot												
Gross	.	.	1,134	798	.	.	.	.	.	.	.	.
Var. cost mod1	.	.	629	505	.	.	.	.	.	.	.	.
Var. cost mod2	.	.	707	540	.	.	.	.	.	.	.	.
Var. cost mod3	.	.	785	576	.	.	.	.	.	.	.	.
Lo proh cost	.	.	0	0	.	.	.	.	.	.	.	.
Hi proh cost	.	.	0	0	.	.	.	.	.	.	.	.
Gf. cost	.	.	0	0	.	.	.	.	.	.	.	.
ANB mod1 w/lo	.	.	504	293	.	.	.	.	.	.	.	.
ANB mod2 w/lo	.	.	426	257	.	.	.	.	.	.	.	.
ANB mod3 w/lo	.	.	348	222	.	.	.	.	.	.	.	.
ANB mod1 w/hi	.	.	504	293	.	.	.	.	.	.	.	.
ANB mod2 w/hi	.	.	426	257	.	.	.	.	.	.	.	.
ANB mod3 w/hi	.	.	348	222	.	.	.	.	.	.	.	.
Cod Trawl												
Gross	1,132	1,421	977	1,111	.	.	.	.	.	.	.	.
Var. cost mod1	276	899	467	567	.	.	.	.	.	.	.	.
Var. cost mod2	324	1,095	532	655	.	.	.	.	.	.	.	.
Var. cost mod3	372	1,291	597	742	.	.	.	.	.	.	.	.
Lo proh cost	29	21	18	29	.	.	.	.	.	.	.	.
Hi proh cost	63	44	37	52	.	.	.	.	.	.	.	.
Gf. cost	65	93	149	251	.	.	.	.	.	.	.	.
ANB mod1 w/lo	762	409	342	264	.	.	.	.	.	.	.	.
ANB mod2 w/lo	714	213	277	177	.	.	.	.	.	.	.	.
ANB mod3 w/lo	666	17	212	89	.	.	.	.	.	.	.	.
ANB mod1 w/hi	728	386	324	241	.	.	.	.	.	.	.	.
ANB mod2 w/hi	680	190	259	153	.	.	.	.	.	.	.	.
ANB mod3 w/hi	632	-6	194	66	.	.	.	.	.	.	.	.

Note: All figure are dollars per metric ton of cod catch. ANB w/lo and ANB w/hi, respectively, are estimates of ANB with the lower and higher estimates of the bycatch cost of prohibited species per metric ton of cod catch. There was not sufficient catch in the trawl fishery the second and third trimesters of 1991 and 1992 or in the pot fishery the first trimester of 1991 to provide meaningful estimates of ANB. Variable costs for pot Jan-Feb 1992 use April figures.

Table 9

Estimates of net benefit per metric ton of cod catch (ANB) and its components by fishery, variable cost model, season, and year for 1991 - April 1993, using 1990 halibut yield loss factors and selected 1992 cod prices.

	1991			1992		1991	1992	1993	
	Jan- May	Jun- Aug	Sep- Dec	Jan- May	Jun- Aug	Sep- Dec	Jan- Dec	Jan- Dec	Jan- May
Cod Longline									
Gross	963	884	830	882	780	846	894	841	857
Var. cost mod1	516	507	510	481	500	581	511	494	479
Var. cost mod2	536	573	577	508	577	693	561	545	513
Var. cost mod3	585	597	601	550	595	703	594	576	551
Lo proh cost	5	15	14	9	35	23	11	20	8
Hi proh cost	5	16	16	10	38	26	12	22	9
Gf. cost	11	40	21	11	20	27	22	16	11
ANB mod1 w/lo	432	322	285	381	225	215	349	311	358
ANB mod2 w/lo	412	256	218	354	148	103	299	261	325
ANB mod3 w/lo	363	232	194	312	130	93	266	230	287
ANB mod1 w/hi	431	321	283	380	222	212	348	310	357
ANB mod2 w/hi	411	255	217	353	145	101	298	259	324
ANB mod3 w/hi	362	230	192	311	127	91	265	228	286
Cod Pot									
Gross	.	714	863	1,024	749	877	788	832	766
Var. cost mod1	.	314	437	403	468	766	375	462	481
Var. cost mod2	.	355	484	456	542	920	420	534	520
Var. cost mod3	.	396	531	510	617	1,074	464	606	559
Lo proh cost	.	1	0	1	0	1	1	1	0
Hi proh cost	.	2	5	2	2	2	3	2	0
Gf. cost	.	1	1	1	4	3	1	3	0
ANB mod1 w/lo	.	398	425	620	278	106	411	367	284
ANB mod2 w/lo	.	357	378	566	203	-47	367	294	245
ANB mod3 w/lo	.	315	330	513	128	-201	323	222	206
ANB mod1 w/hi	.	397	420	619	276	105	408	365	284
ANB mod2 w/hi	.	356	373	565	201	-49	364	293	245
ANB mod3 w/hi	.	314	326	512	127	-202	320	221	206
Cod Trawl									
Gross	1,166	.	.	1,086	.	.	1,166	1,086	1,062
Var. cost mod1	535	.	.	510	.	.	535	510	548
Var. cost mod2	611	.	.	579	.	.	611	579	640
Var. cost mod3	687	.	.	648	.	.	687	648	733
Lo proh cost	25	.	.	29	.	.	25	29	22
Hi proh cost	53	.	.	57	.	.	53	57	44
Gf. cost	137	.	.	134	.	.	137	134	172
ANB mod1 w/lo	468	.	.	413	.	.	468	413	320
ANB mod2 w/lo	392	.	.	344	.	.	392	344	227
ANB mod3 w/lo	316	.	.	274	.	.	316	274	135
ANB mod1 w/hi	440	.	.	385	.	.	440	385	299
ANB mod2 w/hi	364	.	.	316	.	.	364	316	206
ANB mod3 w/hi	288	.	.	247	.	.	288	247	114

Note: All figure are dollars per metric ton of cod catch.
 ANB w/lo and ANB w/hi, respectively, are estimates of ANB with the lower and higher estimates of the bycatch cost of prohibited species per metric ton of cod catch.
 There was not sufficient catch in the trawl fishery the second and third trimesters of 1991 and 1992 or in the pot fishery the first trimester of 1991 to provide meaningful estimates of ANB.

Table 10 Estimates of net benefit per metric ton of cod catch (ANB) and its components by fishery, variable cost model, month and year for 1991 - April 1993, using 1990 halibut yield loss factors and selected 1992 cod prices.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1991												
Cod Longline												
Gross	950	1,081	1,018	989	828	782	886	961	957	924	593	1,001
Var. cost mod1	516	560	555	520	455	466	537	517	565	618	347	607
Var. cost mod2	542	569	584	534	479	514	625	581	624	728	383	681
Var. cost mod3	588	629	633	587	519	542	641	608	659	743	405	713
Lo proh cost	5	6	5	3	5	14	18	14	8	20	14	16
Hi proh cost	6	7	5	3	6	15	19	15	9	22	15	18
Gf. cost	7	17	17	6	8	12	49	55	15	26	24	14
ANB mod1 w/lo	422	497	441	460	360	290	282	374	369	259	209	363
ANB mod2 w/lo	396	488	412	446	335	242	194	310	310	150	173	289
ANB mod3 w/lo	350	428	363	394	296	214	178	284	275	135	151	257
ANB mod1 w/hi	421	497	440	460	359	289	281	373	368	257	208	362
ANB mod2 w/hi	395	487	411	446	335	241	192	309	309	147	171	288
ANB mod3 w/hi	349	428	362	393	295	212	176	282	274	133	150	255
Cod Pot												
Gross	.	.	.	.	.	.	939	627	776	879	1,014	1,111
Var. cost mod1	.	.	.	.	.	.	462	257	378	455	493	625
Var. cost mod2	.	.	.	.	.	.	520	291	416	509	543	691
Var. cost mod3	.	.	.	.	.	.	578	326	454	562	592	758
Lo proh cost	.	.	.	.	.	.	1	1	0	0	0	0
Hi proh cost	.	.	.	.	.	.	2	2	0	10	1	13
Gf. cost	.	.	.	.	.	.	1	1	1	1	1	1
ANB mod1 w/lo	.	.	.	.	.	.	475	369	397	423	519	485
ANB mod2 w/lo	.	.	.	.	.	.	417	334	358	369	470	419
ANB mod3 w/lo	.	.	.	.	.	.	358	299	320	316	421	353
ANB mod1 w/hi	.	.	.	.	.	.	474	367	397	413	519	472
ANB mod2 w/hi	.	.	.	.	.	.	416	333	358	359	470	406
ANB mod3 w/hi	.	.	.	.	.	.	358	298	320	306	420	340
Cod Trawl												
Gross	1,259	1,144	983	1,194	1,301	.	.	.	.	.	.	.
Var. cost mod1	665	488	475	500	863	.	.	.	.	.	.	.
Var. cost mod2	773	549	547	563	1,043	.	.	.	.	.	.	.
Var. cost mod3	880	610	618	626	1,223	.	.	.	.	.	.	.
Lo proh cost	38	25	20	20	56	.	.	.	.	.	.	.
Hi proh cost	93	61	44	41	81	.	.	.	.	.	.	.
Gf. cost	142	82	79	159	245	.	.	.	.	.	.	.
ANB mod1 w/lo	414	548	408	515	136	.	.	.	.	.	.	.
ANB mod2 w/lo	307	488	337	452	-44	.	.	.	.	.	.	.
ANB mod3 w/lo	199	427	266	390	-224	.	.	.	.	.	.	.
ANB mod1 w/hi	359	513	385	493	112	.	.	.	.	.	.	.
ANB mod2 w/hi	252	452	313	431	-68	.	.	.	.	.	.	.
ANB mod3 w/hi	145	391	242	368	-248	.	.	.	.	.	.	.

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

1992

Cod Longline

Gross	931	914	938	879	762	807	759	784	846	.	.	.
Var. cost mod1	511	460	514	475	455	500	493	508	581	.	.	.
Var. cost mod2	540	458	543	500	509	571	572	587	693	.	.	.
Var. cost mod3	584	512	587	542	534	592	588	605	703	.	.	.
Lo proh cost	8	4	5	10	17	43	35	28	23	.	.	.
Hi proh cost	9	5	6	11	19	47	39	30	26	.	.	.
Gf. cost	13	7	10	9	19	28	17	19	27	.	.	.
ANB mod1 w/lo	399	442	408	386	271	235	214	230	215	.	.	.
ANB mod2 w/lo	370	444	379	361	217	164	135	150	103	.	.	.
ANB mod3 w/lo	326	390	335	319	192	143	119	132	93	.	.	.
ANB mod1 w/hi	398	442	407	384	269	231	210	228	212	.	.	.
ANB mod2 w/hi	369	444	378	360	215	160	132	149	101	.	.	.
ANB mod3 w/hi	325	390	334	318	190	139	115	131	91	.	.	.

Cod Pot

Gross	965	959	.	1,127	1,011	843	663	782	877	.	.	.
Var. cost mod1	505	505	.	505	395	444	438	562	766	.	.	.
Var. cost mod2	569	569	.	569	448	508	509	660	920	.	.	.
Var. cost mod3	634	634	.	634	501	572	581	759	1,074	.	.	.
Lo proh cost	0	0	.	1	1	0	0	1	1	.	.	.
Hi proh cost	2	2	.	2	2	1	1	6	2	.	.	.
Gf. cost	0	0	.	2	1	3	5	2	3	.	.	.
ANB mod1 w/lo	459	453	.	619	615	395	219	218	106	.	.	.
ANB mod2 w/lo	395	389	.	555	562	331	148	119	-47	.	.	.
ANB mod3 w/lo	331	325	.	491	509	267	77	21	-201	.	.	.
ANB mod1 w/hi	457	451	.	618	614	394	219	213	105	.	.	.
ANB mod2 w/hi	393	387	.	554	561	330	148	115	-49	.	.	.
ANB mod3 w/hi	329	323	.	490	507	266	76	16	-202	.	.	.

Cod Trawl

Gross	1,437	1,132	1,078	1,065	1,136	.	.	.	.	.	.	.
Var. cost mod1	1,090	579	493	481	570	.	.	.	.	.	.	.
Var. cost mod2	1,271	639	555	550	683	.	.	.	.	.	.	.
Var. cost mod3	1,451	698	617	619	796	.	.	.	.	.	.	.
Lo proh cost	31	28	20	34	59	.	.	.	.	.	.	.
Hi proh cost	93	68	41	64	76	.	.	.	.	.	.	.
Gf. cost	246	121	107	147	199	.	.	.	.	.	.	.
ANB mod1 w/lo	70	403	458	402	308	.	.	.	.	.	.	.
ANB mod2 w/lo	-111	344	396	333	195	.	.	.	.	.	.	.
ANB mod3 w/lo	-292	285	334	264	82	.	.	.	.	.	.	.
ANB mod1 w/hi	8	364	437	372	291	.	.	.	.	.	.	.
ANB mod2 w/hi	-173	304	375	303	178	.	.	.	.	.	.	.
ANB mod3 w/hi	-354	245	313	234	65	.	.	.	.	.	.	.

Table 10 Continued.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1993												
Cod Longline												
Gross	866	890	822	866	.	.	.	.	.	.	.	.
Var. cost mod1	507	483	448	494	.	.	.	.	.	.	.	.
Var. cost mod2	558	508	472	534	.	.	.	.	.	.	.	.
Var. cost mod3	590	551	511	570	.	.	.	.	.	.	.	.
Lo proh cost	7	7	10	8	.	.	.	.	.	.	.	.
Hi proh cost	8	8	11	9	.	.	.	.	.	.	.	.
Gf. cost	19	10	8	8	.	.	.	.	.	.	.	.
ANB mod1 w/lo	332	389	356	356	.	.	.	.	.	.	.	.
ANB mod2 w/lo	282	365	333	316	.	.	.	.	.	.	.	.
ANB mod3 w/lo	249	321	293	280	.	.	.	.	.	.	.	.
ANB mod1 w/hi	332	388	355	356	.	.	.	.	.	.	.	.
ANB mod2 w/hi	281	364	332	315	.	.	.	.	.	.	.	.
ANB mod3 w/hi	249	320	292	279	.	.	.	.	.	.	.	.
Cod Pot												
Gross	.	.	1,035	743	.	.	.	.	.	.	.	.
Var. cost mod1	.	.	596	472	.	.	.	.	.	.	.	.
Var. cost mod2	.	.	674	507	.	.	.	.	.	.	.	.
Var. cost mod3	.	.	752	543	.	.	.	.	.	.	.	.
Lo proh cost	.	.	0	0	.	.	.	.	.	.	.	.
Hi proh cost	.	.	0	0	.	.	.	.	.	.	.	.
Gf. cost	.	.	0	0	.	.	.	.	.	.	.	.
ANB mod1 w/lo	.	.	439	271	.	.	.	.	.	.	.	.
ANB mod2 w/lo	.	.	361	235	.	.	.	.	.	.	.	.
ANB mod3 w/lo	.	.	283	199	.	.	.	.	.	.	.	.
ANB mod1 w/hi	.	.	439	271	.	.	.	.	.	.	.	.
ANB mod2 w/hi	.	.	361	235	.	.	.	.	.	.	.	.
ANB mod3 w/hi	.	.	283	199	.	.	.	.	.	.	.	.
Cod Trawl												
Gross	1,121	1,409	935	1,079	.	.	.	.	.	.	.	.
Var. cost mod1	258	864	455	554	.	.	.	.	.	.	.	.
Var. cost mod2	307	1,060	520	641	.	.	.	.	.	.	.	.
Var. cost mod3	355	1,256	584	729	.	.	.	.	.	.	.	.
Lo proh cost	29	21	18	29	.	.	.	.	.	.	.	.
Hi proh cost	63	44	37	52	.	.	.	.	.	.	.	.
Gf. cost	65	93	149	251	.	.	.	.	.	.	.	.
ANB mod1 w/lo	769	431	312	245	.	.	.	.	.	.	.	.
ANB mod2 w/lo	720	235	247	158	.	.	.	.	.	.	.	.
ANB mod3 w/lo	672	40	183	70	.	.	.	.	.	.	.	.
ANB mod1 w/hi	735	408	294	221	.	.	.	.	.	.	.	.
ANB mod2 w/hi	686	213	229	134	.	.	.	.	.	.	.	.
ANB mod3 w/hi	638	17	165	46	.	.	.	.	.	.	.	.

Note: All figure are dollars per metric ton of cod catch. ANB w/lo and ANB w/hi, respectively, are estimates of ANB with the lower and higher estimates of the bycatch cost of prohibited species per metric ton of cod catch. There was not sufficient catch in the trawl fishery the second and third trimesters of 1991 and 1992 or in the pot fishery the first trimester of 1991 to provide meaningful estimates of ANB. Variable costs for pot Jan-Feb 1992 use April figures.

Table 11 Estimates of net benefit per metric ton of cod catch (ANB) and its components by fishery, variable cost model, season, and year for 1991 - April 1993, using 1991 halibut yield loss factors and 1991 prices.

	1991			1992			1991	1992	1993
	Jan-May	Jun-Aug	Sep-Dec	Jan-May	Jun-Aug	Sep-Dec	Jan-Dec	Jan-Dec	Jan-May
Cod Longline									
Gross	1,176	1,171	957	1,063	1,020	974	1,096	1,041	1,013
Var. cost mod1	589	608	554	543	582	625	582	563	533
Var. cost mod2	586	642	607	550	633	723	609	592	549
Var. cost mod3	656	695	644	609	674	745	662	642	602
Lo proh cost	5	15	14	9	35	23	11	20	8
Hi proh cost	6	18	17	11	41	28	13	23	10
Gf. cost	11	40	21	11	20	27	22	16	11
ANB mod1 w/lo	571	508	368	499	382	299	481	443	461
ANB mod2 w/lo	574	474	315	492	332	201	454	414	444
ANB mod3 w/lo	505	421	278	433	290	179	400	364	391
ANB mod1 w/hi	570	505	365	498	377	294	479	439	459
ANB mod2 w/hi	573	471	313	491	326	196	451	410	443
ANB mod3 w/hi	504	418	275	432	285	174	398	360	390
Cod Pot									
Gross	.	897	972	1,184	983	1,020	935	1,041	824
Var. cost mod1	.	387	479	485	551	816	433	543	514
Var. cost mod2	.	428	526	538	625	969	477	615	553
Var. cost mod3	.	469	573	592	700	1,123	521	688	592
Lo proh cost	.	1	0	1	0	1	1	1	0
Hi proh cost	.	2	5	2	2	2	3	2	0
Gf. cost	.	1	1	1	4	3	1	3	0
ANB mod1 w/lo	.	509	492	698	429	200	501	495	309
ANB mod2 w/lo	.	467	445	645	354	46	456	423	270
ANB mod3 w/lo	.	426	398	591	279	-107	412	350	231
ANB mod1 w/hi	.	508	488	697	427	198	498	493	309
ANB mod2 w/hi	.	466	440	643	353	45	453	421	270
ANB mod3 w/hi	.	425	393	590	278	-109	409	349	231
Cod Trawl									
Gross	1,221	.	.	1,150	.	.	1,221	1,150	1,095
Var. cost mod1	555	.	.	531	.	.	555	531	564
Var. cost mod2	631	.	.	600	.	.	631	600	657
Var. cost mod3	707	.	.	670	.	.	707	670	749
Lo proh cost	25	.	.	29	.	.	25	29	22
Hi proh cost	67	.	.	70	.	.	67	70	48
Gf. cost	137	.	.	134	.	.	137	134	172
ANB mod1 w/lo	504	.	.	455	.	.	504	455	337
ANB mod2 w/lo	428	.	.	386	.	.	428	386	244
ANB mod3 w/lo	352	.	.	317	.	.	352	317	152
ANB mod1 w/hi	462	.	.	414	.	.	462	414	311
ANB mod2 w/hi	386	.	.	345	.	.	386	345	218
ANB mod3 w/hi	310	.	.	276	.	.	310	276	126

Note: All figure are dollars per metric ton of cod catch. ANB w/lo and ANB w/hi, respectively, are estimates of ANB with the lower and higher estimates of the bycatch cost of prohibited species per metric ton of cod catch. There was not sufficient catch in the trawl fishery the second and third trimesters of 1991 and 1992 or in the pot fishery the first trimester of 1991 to provide meaningful estimates of ANB.

Table 12

Estimates of net benefit per metric ton of cod catch (ANB) and its components by fishery, variable cost model, month, and year for 1991 - April 1993, using 1991 halibut yield loss factors and 1991 prices.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1991												
Cod Longline												
Gross	1,107	1,255	1,198	1,180	1,140	1,073	1,174	1,243	1,091	1,062	687	1,168
Var. cost mod1	570	620	617	586	562	567	637	619	611	666	379	665
Var. cost mod2	579	610	626	579	553	582	693	651	655	761	405	721
Var. cost mod3	640	687	692	650	623	640	738	706	703	789	436	769
Lo proh cost	5	6	5	3	5	14	18	14	8	20	14	16
Hi proh cost	7	8	6	3	6	16	21	17	10	24	16	20
Gf. cost	7	17	17	6	8	12	49	55	15	26	24	14
ANB mod1 w/lo	525	612	559	586	564	481	470	555	456	350	271	472
ANB mod2 w/lo	516	622	550	593	574	465	413	523	412	255	244	417
ANB mod3 w/lo	455	545	483	522	504	408	369	468	364	227	214	368
ANB mod1 w/hi	524	611	558	585	563	478	467	552	455	346	268	469
ANB mod2 w/hi	515	621	549	592	573	462	410	520	410	251	242	413
ANB mod3 w/hi	454	544	482	521	503	405	365	465	363	223	211	365
Cod Pot												
Gross							1,226	771	873	1,001	1,106	1,249
Var. cost mod1							573	315	412	498	527	714
Var. cost mod2							632	350	450	551	576	781
Var. cost mod3							690	385	489	605	625	847
Lo proh cost							1	1	0	0	0	0
Hi proh cost							2	2	0	10	1	13
Gf. cost							1	1	1	1	1	1
ANB mod1 w/lo							651	454	460	502	578	534
ANB mod2 w/lo							593	419	422	448	529	468
ANB mod3 w/lo							534	384	384	395	480	401
ANB mod1 w/hi							650	453	460	492	578	521
ANB mod2 w/hi							592	418	422	438	529	455
ANB mod3 w/hi							534	383	384	385	479	388
Cod Trawl												
Gross	1,340	1,219	1,004	1,250	1,341							
Var. cost mod1	688	511	481	523	884							
Var. cost mod2	795	572	552	586	1,064							
Var. cost mod3	902	633	623	649	1,244							
Lo proh cost	38	25	20	20	56							
Hi proh cost	112	72	55	51	133							
Gf. cost	142	82	79	159	245							
ANB mod1 w/lo	471	601	425	548	156							
ANB mod2 w/lo	364	540	353	486	-24							
ANB mod3 w/lo	257	479	282	423	-204							
ANB mod1 w/hi	398	553	389	517	79							
ANB mod2 w/hi	291	493	318	454	-101							
ANB mod3 w/hi	184	432	247	392	-281							

Table 12 Continued.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1992												
Cod Longline												
Gross	1,095	1,068	1,100	1,043	1,030	1,060	997	1,016	974	.	.	.
Var. cost mod1	567	513	570	531	547	588	575	587	625	.	.	.
Var. cost mod2	578	494	581	538	572	631	627	641	723	.	.	.
Var. cost mod3	638	563	641	596	622	677	667	681	745	.	.	.
Lo proh cost	8	4	5	10	17	43	35	28	23	.	.	.
Hi proh cost	10	5	7	12	20	49	41	33	28	.	.	.
Gf. cost	13	7	10	9	19	28	17	19	27	.	.	.
ANB mod1 w/lo	506	543	515	493	447	402	370	382	299	.	.	.
ANB mod2 w/lo	495	562	503	486	422	358	317	328	201	.	.	.
ANB mod3 w/lo	436	493	443	428	372	313	278	287	179	.	.	.
ANB mod1 w/hi	504	542	513	491	443	395	364	377	294	.	.	.
ANB mod2 w/hi	494	561	502	484	419	352	311	323	196	.	.	.
ANB mod3 w/hi	434	492	442	427	368	306	272	283	174	.	.	.
Cod Pot												
Gross	965	959	.	1,210	1,184	1,084	878	1,046	1,020	.	.	.
Var. cost mod1	570	570	.	570	481	536	511	653	816	.	.	.
Var. cost mod2	634	634	.	634	534	600	582	751	969	.	.	.
Var. cost mod3	698	698	.	698	587	664	653	849	1,123	.	.	.
Lo proh cost	0	0	.	1	1	0	0	1	1	.	.	.
Hi proh cost	2	2	.	2	2	1	1	6	2	.	.	.
Gf. cost	0	0	.	2	1	3	5	2	3	.	.	.
ANB mod1 w/lo	394	388	.	637	702	545	361	391	200	.	.	.
ANB mod2 w/lo	330	324	.	573	649	481	290	292	46	.	.	.
ANB mod3 w/lo	266	260	.	509	596	417	219	194	-107	.	.	.
ANB mod1 w/hi	393	386	.	636	701	544	361	386	198	.	.	.
ANB mod2 w/hi	328	322	.	572	648	480	289	287	45	.	.	.
ANB mod3 w/hi	264	258	.	508	595	416	218	189	-109	.	.	.
Cod Trawl												
Gross	1,614	1,242	1,118	1,127	1,290	.	.	.	.	.	.	.
Var. cost mod1	1,129	619	505	503	637	.	.	.	.	.	.	.
Var. cost mod2	1,310	678	566	572	750	.	.	.	.	.	.	.
Var. cost mod3	1,491	737	628	641	863	.	.	.	.	.	.	.
Lo proh cost	31	28	20	34	59	.	.	.	.	.	.	.
Hi proh cost	109	82	49	77	146	.	.	.	.	.	.	.
Gf. cost	246	121	107	147	199	.	.	.	.	.	.	.
ANB mod1 w/lo	207	475	486	443	395	.	.	.	.	.	.	.
ANB mod2 w/lo	26	415	424	374	282	.	.	.	.	.	.	.
ANB mod3 w/lo	-154	356	362	305	169	.	.	.	.	.	.	.
ANB mod1 w/hi	129	421	457	400	308	.	.	.	.	.	.	.
ANB mod2 w/hi	-51	361	395	331	195	.	.	.	.	.	.	.
ANB mod3 w/hi	-232	302	333	262	82	.	.	.	.	.	.	.

Table 12 Continued.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1993												
Cod Longline												
Gross	1,027	1,050	971	1,023								
Var. cost mod1	563	538	499	548								
Var. cost mod2	595	545	506	571								
Var. cost mod3	644	604	560	622								
Lo proh cost	7	7	10	8								
Hi proh cost	8	9	11	9								
Gf. cost	19	10	8	8								
ANB mod1 w/lo	438	494	454	460								
ANB mod2 w/lo	405	487	447	436								
ANB mod3 w/lo	357	429	393	385								
ANB mod1 w/hi	437	493	452	459								
ANB mod2 w/hi	404	486	445	435								
ANB mod3 w/hi	356	427	391	384								
Cod Pot												
Gross			1,134	798								
Var. cost mod1			629	505								
Var. cost mod2			707	540								
Var. cost mod3			785	576								
Lo proh cost			0	0								
Hi proh cost			0	0								
Gf. cost			0	0								
ANB mod1 w/lo			504	293								
ANB mod2 w/lo			426	257								
ANB mod3 w/lo			348	222								
ANB mod1 w/hi			504	293								
ANB mod2 w/hi			426	257								
ANB mod3 w/hi			348	222								
Cod Trawl												
Gross	1,132	1,421	977	1,111								
Var. cost mod1	276	899	467	567								
Var. cost mod2	324	1,095	532	655								
Var. cost mod3	372	1,291	597	742								
Lo proh cost	29	21	18	29								
Hi proh cost	73	51	40	58								
Gf. cost	65	93	149	251								
ANB mod1 w/lo	762	409	342	264								
ANB mod2 w/lo	714	213	277	177								
ANB mod3 w/lo	666	17	212	89								
ANB mod1 w/hi	719	379	320	235								
ANB mod2 w/hi	670	183	255	147								
ANB mod3 w/hi	622	-13	191	60								

Note: All figure are dollars per metric ton of cod catch. ANB w/lo and ANB w/hi, respectively, are estimates of ANB with the lower and higher estimates of the bycatch cost of prohibited species per metric ton of cod catch. There was not sufficient catch in the trawl fishery the second and third trimesters of 1991 and 1992 or in the pot fishery the first trimester of 1991 to provide meaningful estimates of ANB. Variable costs for pot Jan-Feb 1992 use April figures.

Table 13 Estimates of net benefit per metric ton of cod catch (ANB) and its components by fishery, variable cost model, season, and year for 1991 - April 1993, using 1991 halibut yield loss factors and selected 1992 cod prices.

	1991			1992			1991	1992	1993
	Jan-May	Jun-Aug	Sep-Dec	Jan-May	Jun-Aug	Sep-Dec	Jan-Dec	Jan-Dec	Jan-May
Cod Longline									
Gross	963	884	830	882	780	846	894	841	857
Var. cost mod1	516	507	510	481	500	581	511	494	479
Var. cost mod2	536	573	577	508	577	693	561	545	513
Var. cost mod3	585	597	601	550	595	703	594	576	551
Lo proh cost	5	15	14	9	35	23	11	20	8
Hi proh cost	6	18	17	11	41	28	13	23	10
Gf. cost	11	40	21	11	20	27	22	16	11
ANB mod1 w/lo	432	322	285	381	225	215	349	311	358
ANB mod2 w/lo	412	256	218	354	148	103	299	261	325
ANB mod3 w/lo	363	232	194	312	130	93	266	230	287
ANB mod1 w/hi	431	319	282	379	219	210	347	308	357
ANB mod2 w/hi	411	253	216	352	142	98	297	257	323
ANB mod3 w/hi	362	229	191	311	124	88	264	226	285
Cod Pot									
Gross	.	714	863	1,024	749	877	788	832	766
Var. cost mod1	.	314	437	403	468	766	375	462	481
Var. cost mod2	.	355	484	456	542	920	420	534	520
Var. cost mod3	.	396	531	510	617	1,074	464	606	559
Lo proh cost	.	1	0	1	0	1	1	1	0
Hi proh cost	.	2	5	2	2	2	3	2	0
Gf. cost	.	1	1	1	4	3	1	3	0
ANB mod1 w/lo	.	398	425	620	278	106	411	367	284
ANB mod2 w/lo	.	357	378	566	203	-47	367	294	245
ANB mod3 w/lo	.	315	330	513	128	-201	323	222	206
ANB mod1 w/hi	.	397	420	619	276	105	408	365	284
ANB mod2 w/hi	.	356	373	565	201	-49	364	293	245
ANB mod3 w/hi	.	314	326	512	127	-202	320	221	206
Cod Trawl									
Gross	1,166	.	.	1,086	.	.	1,166	1,086	1,062
Var. cost mod1	535	.	.	510	.	.	535	510	548
Var. cost mod2	611	.	.	579	.	.	611	579	640
Var. cost mod3	687	.	.	648	.	.	687	648	733
Lo proh cost	25	.	.	29	.	.	25	29	22
Hi proh cost	67	.	.	70	.	.	67	70	48
Gf. cost	137	.	.	134	.	.	137	134	172
ANB mod1 w/lo	468	.	.	413	.	.	468	413	320
ANB mod2 w/lo	392	.	.	344	.	.	392	344	227
ANB mod3 w/lo	316	.	.	274	.	.	316	274	135
ANB mod1 w/hi	426	.	.	372	.	.	426	372	294
ANB mod2 w/hi	350	.	.	303	.	.	350	303	201
ANB mod3 w/hi	274	.	.	233	.	.	274	233	109

Note: All figure are dollars per metric ton of cod catch.
 ANB w/lo and ANB w/hi, respectively, are estimates of ANB with the lower and higher estimates of the bycatch cost of prohibited species per metric ton of cod catch.
 There was not sufficient catch in the trawl fishery the second and third trimesters of 1991 and 1992 or in the pot fishery the first trimester of 1991 to provide meaningful estimates of ANB.

Table 14 Estimates of net benefit per metric ton of cod catch (ANB) and its components by fishery, variable cost model, month, and year for 1991 - April 1993, using 1991 halibut yield loss factors and selected 1992 cod prices.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1991												
Cod Longline												
Gross	950	1,081	1,018	989	828	782	886	961	957	924	593	1,001
Var. cost mod1	516	560	555	520	455	466	537	517	565	618	347	607
Var. cost mod2	542	569	584	534	479	514	625	581	624	728	383	681
Var. cost mod3	588	629	633	587	519	542	641	608	659	743	405	713
Lo proh cost	5	6	5	3	5	14	18	14	8	20	14	16
Hi proh cost	7	8	6	3	6	16	21	17	10	24	16	20
Gf. cost	7	17	17	6	8	12	49	55	15	26	24	14
ANB mod1 w/lo	422	497	441	460	360	290	282	374	369	259	209	363
ANB mod2 w/lo	396	488	412	446	335	242	194	310	310	173	173	289
ANB mod3 w/lo	350	428	363	394	296	214	178	284	275	135	151	257
ANB mod1 w/hi	421	496	440	460	359	288	279	371	367	256	207	360
ANB mod2 w/hi	395	487	411	446	334	240	191	307	308	146	170	286
ANB mod3 w/hi	349	427	362	393	295	211	174	281	273	131	149	254
Cod Pot												
Gross							939	627	776	879	1,014	1,111
Var. cost mod1							462	257	378	455	493	625
Var. cost mod2							520	291	416	509	543	691
Var. cost mod3							578	326	454	562	592	758
Lo proh cost							1	1	0	0	0	0
Hi proh cost							2	2	0	10	1	13
Gf. cost							1	1	1	1	1	1
ANB mod1 w/lo							475	369	397	423	519	485
ANB mod2 w/lo							417	334	358	369	470	419
ANB mod3 w/lo							358	299	320	316	421	353
ANB mod1 w/hi							474	367	397	413	519	472
ANB mod2 w/hi							416	333	358	359	470	406
ANB mod3 w/hi							358	298	320	306	420	340
Cod Trawl												
Gross	1,259	1,144	983	1,194	1,301							
Var. cost mod1	665	488	475	500	863							
Var. cost mod2	773	549	547	563	1,043							
Var. cost mod3	880	610	618	626	1,223							
Lo proh cost	38	25	20	20	56							
Hi proh cost	112	72	55	51	133							
Gf. cost	142	82	79	159	245							
ANB mod1 w/lo	414	548	408	515	136							
ANB mod2 w/lo	307	488	337	452	-44							
ANB mod3 w/lo	199	427	266	390	-224							
ANB mod1 w/hi	341	501	373	484	60							
ANB mod2 w/hi	233	440	302	421	-121							
ANB mod3 w/hi	126	380	231	358	-301							

Table 14 Continued.

1992 Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

Cod Longline

Gross	931	914	938	879	762	807	759	784	846	.	.	.
Var. cost mod1	511	460	514	475	455	500	493	508	581	.	.	.
Var. cost mod2	540	458	543	500	509	571	572	587	693	.	.	.
Var. cost mod3	584	512	587	542	534	592	588	605	703	.	.	.
Lo proh cost	8	4	5	10	17	43	35	28	23	.	.	.
Hi proh cost	10	5	7	12	20	49	41	33	28	.	.	.
Gf. cost	13	7	10	9	19	28	17	19	27	.	.	.
ANB mod1 w/lo	399	442	408	386	271	235	214	230	215	.	.	.
ANB mod2 w/lo	370	444	379	361	217	164	135	150	103	.	.	.
ANB mod3 w/lo	326	390	335	319	192	143	119	132	93	.	.	.
ANB mod1 w/hi	397	441	407	384	267	229	208	225	210	.	.	.
ANB mod2 w/hi	368	443	378	359	214	158	129	145	98	.	.	.
ANB mod3 w/hi	324	389	334	317	189	137	113	128	88	.	.	.

Cod Pot

Gross	965	959	.	1,127	1,011	843	663	782	877	.	.	.
Var. cost mod1	505	505	.	505	395	444	438	562	766	.	.	.
Var. cost mod2	569	569	.	569	448	508	509	660	920	.	.	.
Var. cost mod3	634	634	.	634	501	572	581	759	1,074	.	.	.
Lo proh cost	0	0	.	1	1	0	0	1	1	.	.	.
Hi proh cost	2	2	.	2	2	1	1	6	2	.	.	.
Gf. cost	0	0	.	2	1	3	5	2	3	.	.	.
ANB mod1 w/lo	459	453	.	619	615	395	219	218	106	.	.	.
ANB mod2 w/lo	395	389	.	555	562	331	148	119	-47	.	.	.
ANB mod3 w/lo	331	325	.	491	509	267	77	21	-201	.	.	.
ANB mod1 w/hi	457	451	.	618	614	394	219	213	105	.	.	.
ANB mod2 w/hi	393	387	.	554	561	330	148	115	-49	.	.	.
ANB mod3 w/hi	329	323	.	490	507	266	76	16	-202	.	.	.

Cod Trawl

Gross	1,437	1,132	1,078	1,065	1,136	.	.	.	.	.	.	.
Var. cost mod1	1,090	579	493	481	570	.	.	.	.	.	.	.
Var. cost mod2	1,271	639	555	550	683	.	.	.	.	.	.	.
Var. cost mod3	1,451	698	617	619	796	.	.	.	.	.	.	.
Lo proh cost	31	28	20	34	59	.	.	.	.	.	.	.
Hi proh cost	109	82	49	77	146	.	.	.	.	.	.	.
Gf. cost	246	121	107	147	199	.	.	.	.	.	.	.
ANB mod1 w/lo	70	403	458	402	308	.	.	.	.	.	.	.
ANB mod2 w/lo	-111	344	396	333	195	.	.	.	.	.	.	.
ANB mod3 w/lo	-292	285	334	264	82	.	.	.	.	.	.	.
ANB mod1 w/hi	-8	349	429	360	221	.	.	.	.	.	.	.
ANB mod2 w/hi	-189	290	367	291	108	.	.	.	.	.	.	.
ANB mod3 w/hi	-370	231	305	222	-5	.	.	.	.	.	.	.

Table 14 Continued.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1993												
Cod Longline												
Gross	866	890	822	866	.	.	.	.	.	.	.	.
Var. cost mod1	507	483	448	494	.	.	.	.	.	.	.	.
Var. cost mod2	558	508	472	534	.	.	.	.	.	.	.	.
Var. cost mod3	590	551	511	570	.	.	.	.	.	.	.	.
Lo proh cost	7	7	10	8	.	.	.	.	.	.	.	.
Hi proh cost	8	9	11	9	.	.	.	.	.	.	.	.